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# Gleanings in BEE CULTURE

March 1961

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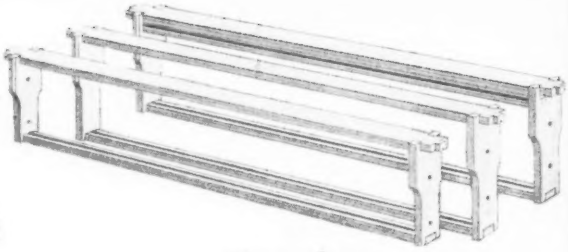

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# Gleanings in Bee Culture

March, 1961 CONTENTS Vol. 89, No. 3

87 Years Continuous Publication by the Same Organization.

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**COVER PICTURE** — Tennessee's pretty Elaine Prather graces our March cover. As poised as she is beautiful, Elaine was chosen the 1961 American Honey Queen at the Omaha American Beekeeping Federation Convention. Being a National Honey Queen is no small job as last year's queen, Monicca McNutt, can attest. Elaine will spend a very active year traveling and promoting honey all over the United States. If you would like Elaine to visit your state for some public event, like a state fair, we suggest you contact Leslie Little, Shelbyville, Tennessee, for further information.

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# Gleanings' Mail Box

JACK HAPP

THIS PAGE IS RESERVED for the opinions of our readers. We receive many letters which we are sure are of interest to Gleanings' subscribers. We can only select the letters we feel will interest the majority and the ones we publish are not necessarily the views of the Gleanings' staff. We hope that each one of you will contribute to this page. Letters must be signed to be considered for publication.

Dear Editor:

For some reason beekeepers and the beekeeping industry seem especially prone to accept all "advertising" favorable to honey and to react oft times violently to any adverse publicity. We again have a case of an acceptance of scientifically insupportable advertising, namely that of Folk Medicine.

There isn't any disagreement among us as beekeepers regarding our desire to increase the use of honey. But wanting to see increased utilization of honey does not justify the support and/or use of border-line quackery to sell our product. The use of such scientifically unsound (or invalid in some cases) statements most certainly should be attacked by the Food and Drug Administration, Good Housekeeping, American Medical Association and others.

It continues to be a mystery to me why some of us continually emphasize the medicinal properties of honey when scientists like Dr. Haydak point out "—I do not see how medicinal uses of honey can greatly increase the consumption of this product." ABJ 100 (11):429.

To quote Dr. Haydak again, "I think the only solid future for honey is in its use as a natural healthful nutrient which can be used in combination with almost any other food—."

Personally I'm not convinced that Folk Medicine has contributed to increased honey consumption. I tried the so-called "miracle cures" from this publication and much prefer my honey on grapefruit, on muffins, in honey-cake, in cookies or just plain in the comb. Contrary to what some may think, the average American is quite well informed and this fiction of medicinal properties will not last without incontrovertible scientific support.

Furthermore, we aren't giving the wonderful and unique flavors and quality of honey very much credit when we accept "advertising" such as Folk Medicine gave. Honey itself continues to be our best advertisment. Honey utilization research is essential, but the simple expedient of getting honey into children's and adults' hands will create the largest market. — D. M. N., North Dakota.

Dear Editor:

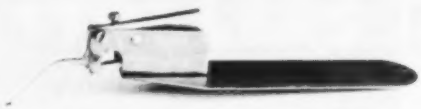
Your magazine **was** good until you have made a regular Hollywood society thing out of it, and filled it with nonsense and women and Honey Queens every issue.

I want a book for **men only,** with items of interest for beekeepers—not a book filled with women's and flappers' pictures etc. — From an old fashioned man. F. B., Mich.

Dear Editor:

I saw a copy of your magazine, Gleanings in Bee Culture, for the first time recently. I intended only examining it casually, but I found myself amazed at the wealth of interesting material. Your choice of articles interests even those not in your business.

I am a teacher in the public schools and I am also teaching a science series on television this year. Needless to say, the bits of information (new to me) will make my unit on insects, and more specifically, bees, a more comprehensive study this year. — Mrs. E. D., Texas.



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# Monthly HONEY Report

**WALTER BARTH**
**Field Editor**
**San Antonio, Texas**

EVER SINCE MY college days in the beekeeping department at Cornell University I have had a tremendous desire to work with honey candy. Here, in my opinion, lies a new market for the **smaller quality honey packers.** There are a number of beekeepers making honey candy today but in nearly every instance the candy is nothing more than Dyce processed creamed honey covered with chocolate. Actually this is not a craft confectionery. A variety pack is necessary to develop a good candy market. Different varieties of honey candies are on the market but are all sold singly from different sources.

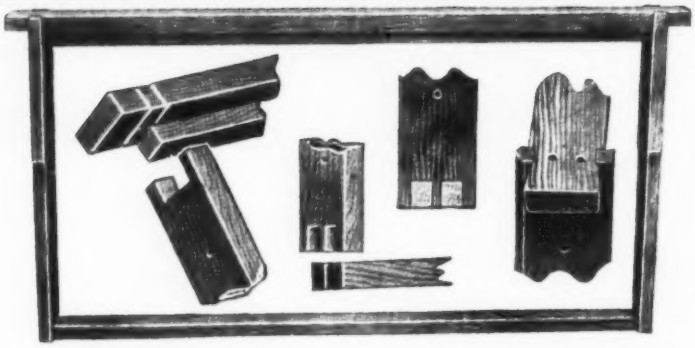
Just the other day I received some truly delicious honey candies from Mr. S. K. Hampton of Salt Lake City, Utah. Mr. Hampton was the first to discover and promote the now successful plastic honey bear containers. Today Hampton and his brother have come up with some fine chocolate covered honey candies of great promise. They have the right idea in believing that honey candies can have different flavors and body just so long as honey is the bulk of the ingredients.

This same line of thinking should apply to marketing honey. The Sioux Honey Co-op's honey syrup is a good step in that direction. Folks will cry "foul" at the thought of blending sugar syrup and honey even when properly labeled. But this idea is helping to move honey and that is the goal of any packer. Certainly honey consumption should be increased. All members of the beekeeping industry recognize this basic fact but only a pathetic fraction come forward with funds to assist in a promotional program to increase honey consumption. There are isolated exceptions but their efforts are not effectual because of the absence of a coordinated idea or purpose that will interest consumers in honey.

Whenever we receive some free advertising it generally concerns the biology of the bee or the antics of a beekeeper catching a swarm, but seldom something about honey itself. Sometimes we are lucky to have the value of pollination reviewed.

### Honey Market

Generally there seems to be ample moisture for the winter season. Honey plants are in good shape. Bees are wintering well. The honey market remains strong, not much honey left in the hands of the producers. There has been little change in prices over last month. White honey in sixties is bringing from 12 to 15 cents with amber honey going as high as 12½ to 13 cents.



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"Signs of a very hasty retreat could easily be seen in the trampled underbrush in the surrounding woods."

**F. A. ROBINSON**
**Assistant Apiculturist**
**Florida Agri. Exp. Stations.**
**Gainesville, Florida**

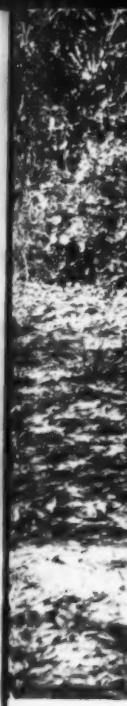
ONE THING THAT can always be counted on to arouse flagging interest of those attending a beekeepers' meeting in Florida is the subject of bears, and their fondness for bees and honey. In fact, to most of our beekeepers, the mention of bears gets the same results as waving a red flag in front of a bull; and any foolhardy soul that so much as intimates that there is any possible excuse or reason for allowing one bear to remain on the face of the earth is treated with little cordiality. In other words, bears are not popular with Florida beekeepers. Unfortunately for the beekeeper, much of the best gallberry and palmetto honey producing land is now found in the various state and national forest areas and here the beekeeper, and not the bear, is considered to be the intruder. Also, in these areas, wildlife authorities get quite upset if a beekeeper uses a shotgun to try to reason with a bear. Game wardens will try to trap any bear that becomes especially obnoxious, but even when successful, this practice does little good, since they release these bears in another area, where they soon find some other beekeeper to annoy.

A platform in the Apalachicola National Forest designed to protect colonies of bees from destruction by bears.—Photo by J. D. Haynie, Florida Agricultural Extension Service.

Since it is evident that the bears are going to remain, the beekeeper has the choice of leaving these areas, or finding some way to protect his colonies from bear attacks. One method that has been tried is the use of "bear-proof" platforms. While a **properly constructed** platform can be 100 per cent effective, it is quite expensive to build, and it is very difficult to get the bees and honey on and off. For these reasons very few platforms have been used, except in the tupelo honey producing area where high waters make it necessary to keep the colonies off the ground.

### A "Bear-Proof" Fence

Another method of protecting bees that seems practical is to build a "bear-proof" fence and the use of fences to protect bees is the subject of this article. Of all the different types of fences that could be built, an electric fence would seem to be the cheapest and most effective. Everyone has seen how one small charged wire can keep a thousand-pound bull penned in, so why shouldn't it do the same for a bear? After talking to several beekeepers, there seemed to be considerable doubt as to just how effective an electric fence would be. Some beekeepers claim-



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The remains of a colony that had been inside one of the fenced plots. Note how gate has been wrecked and wires on left side of pen broken.

ed to have tried them with no success, but others reported good results when the fences were properly built. So it was decided to undertake some controlled tests to determine just how effective an electric fence could be. The first problem was to find an area, where bears were known to be, in which to carry on these tests. This problem was quickly solved when one beekeeper reported having to move from a close-by area after losing 75 colonies in one year. This area was a twenty-seven thousand acre block of land belonging to the St. Regis Paper Company. This land is located about 20 miles northwest of Daytona Beach, and is known to have a large bear population. Since most of the area is in a game preserve where no hunting is ever allowed, there was no danger of running out of bears before the tests were completed.

As the cost of any fence would be quite important to most beekeepers, we first decided to see just how lightly constructed a fence could be, and still keep bears out! We also wanted to find out whether smooth wire would be as effective as barbed wire, as it would be a little cheaper, and much easier to work with. One point that everyone agreed on was that for any electric fence to be effective, it was necessary to put both "hot" and ground wires on the posts, and not depend on the ground for a complete circuit. Since the test sites were two or three miles from the nearest power line, it was necessary to use battery operated fence controllers to charge the fences. Four different fenced plots were constructed at each of two locations. Some of the fences had three "hot" and three ground wires; some had four pairs of wires; some were made with barbed wire; and others with smooth wire. All the plots were eight feet square. Light nail-on insulators were used for attaching the charged wires to the posts. One fence controller, powered by a six volt, dry cell battery, was used to charge the wires on all the fences at each location. The controllers have an output voltage of five thousand volts, which is more than enough to make a person back off! When construction of the fences was completed, a five-frame nuc or a single story colony was placed in each plot. One nuc was left outside of the pens at each location to serve as "bait" for the bears. After several weeks of waiting, we finally had a visit from a bear, and on our inspection trip found not only the bait nucs but also those in the

fenced plots destroyed. In some cases the gates were torn up, but in other cases, the bears just walked right through the wire, not caring at all whether it was barbed or smooth wire. Entry was gained into one pen by digging under the fence.

In view of these results it was readily apparent that rather than trying to find out how lightly constructed a fence could be and still be effective, our problem was to see if a fence could be built that would be strong enough to turn a bear away, regardless of cost!

In March of 1960, construction of fence "A" and fence "B" was completed. Both of these fences had four charged and four ground wires on the post. The main differences in the two fences were in the spacing of the wires, and the placing of the charged wires on the inside of the posts as in the case of fence "A" instead of on the outside as in the case of fence "B". This permitted the use of fewer insulators, since only four, instead of eight, were required at each corner. There was one other difference between the two fences, and that was a heavy wire mat laid around the entire outside of perimeter of fence "A". This mat proved to be the difference between success and failure of the two fences. Twelve volt, instead of six volt batteries were used to power the fence charges, thus doubling the charge on the wires.

The new fences were so well built and impressive looking, that a false sense of security prevailed, and full sized colonies were placed in the pens instead of nucs. This proved to be a rash act, that was later regretted. On our return visit a week later, it appeared that we had at last built a fence that bears could not penetrate. The colonies in fence "A" were still intact, even though a bear or bears had tried to dig in. It should be noted that in this instance the bear or bears must have been standing on the wire mat, which was grounded to the fence controller; and when it touched a hot wire, received the full effect of the 10,000 volt charge on the wires. Signs of a very hasty retreat could easily be seen in the trampled underbrush in the surrounding woods. On visiting fence "B" we found an entirely different situation. Here the bears had little trouble gaining entry, by digging under the fence, and as if to make up for being rebuffed at the first area, they really outdid themselves here. Of the six colonies in this fenced plot, not one single frame remained intact and about half the hive bodies were too badly damaged to repair. There were a great number of very

Colonies of bees protected by fence "A". Charged wires are on the inside of the post on this fence. Note wire mat around outside of fence.

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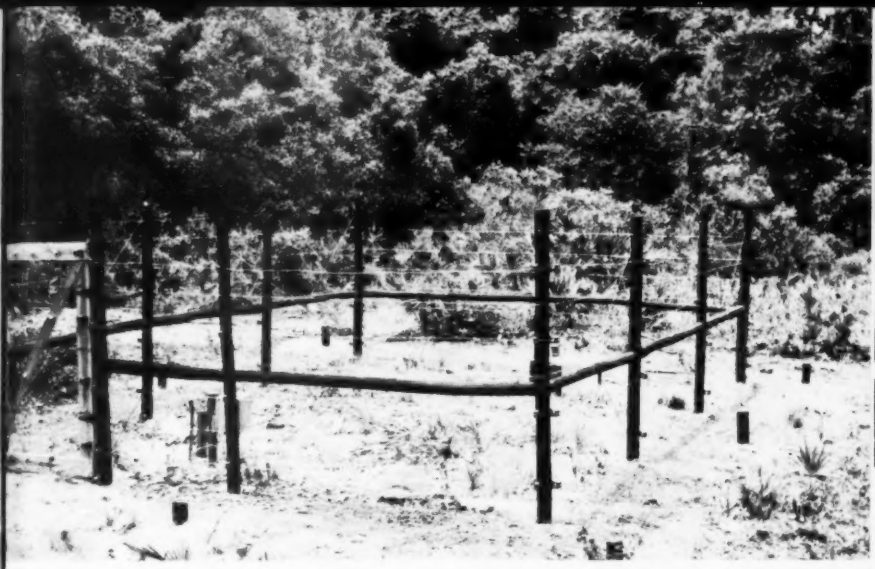

Fence "B" was constructed with the charged wires on the outside of the post, also the wires are spaced farther apart than on fence "A". This picture was taken after a wire mat was installed around it. However, this fence was still being charged by a six volt battery and the charge would not repel bears. Entrance was gained by going between the strands of wire. (Note overturned colony.)

mad bees still hanging around, which we finally got into a hive. After cleaning up the debris and repairing the fence, we installed a wire mat around the outside of this fence. As the original batteries had been exhausted due to a "hot" and ground wire short, we were forced to operate the charger on this fence from a six volt instead of a 12 volt battery. On returning the following day, we found that again the bears had gained entry in spite of the wire mat around the outside! This time they had come between the wires, and evidently the charge on the wire was not strong enough to turn them back when a six volt battery was used. A colony had been turned over several times, but since it had been stapled together and the top nailed on, the bear evidently decided it was not worth the trouble of tearing up. However, the bees decided that they had had enough. All of them had left the hive to find a more secure home. The colonies in fence "A" were still intact, though we could see several new places where bears had tried to dig under the fence, and been turned away.

For an electric fence to be effective there are several conditions that must be met. First the system must be well grounded. During a drouth period, we found that one can hold on to the charged wires, while standing on the ground without feeling any shock at all. The wire mats, in addition to preventing the bears digging under the fence, also assured their being well grounded when they touched the charged wires. Another condition that must be met is to make sure that nothing happens to short the charged wires to a ground wire. This can happen from several causes; such as limbs falling across the wires, or grass growing up and touching a charged wire. No matter how well built an electric fence is, it offers little protection from bears if something happens so that there is no charge on the wires. Even though bears had been unable to get through this fence "A" for over three months, they never quit trying.

As a result of these tests, several conclusions have been reached regarding the use of electric fences. Our results have shown that properly built electric fences can protect bees from bears. However, it should be emphasized that the fences must not only be well built but must be maintained in good condition. This requires frequent visits by the beekeeper to make sure the fence remains in good shape.

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# Big Honey Crops with Two Queen System [1]

**By using two queens, Wisconsin's John Long averages over 300 pounds per colony.**

**HENRY J. RAHMLOW**
**St. Petersburg, Florida**

"I CAN AVERAGE over 300 pounds of honey per colony in a normal year by using the two-queen method of beekeeping," Mr. John Long, Chief Bee Inspector for Wisconsin, said to me last summer when we visited his apiary near Westfield. Then he added "It is not unusual for colonies to produce 500 pounds in good seasons".

The different methods of beekeeping Mr. Long has used, from one brood chamber comb honey production to the three brood chamber method for producing extracted honey were described in the January issue of Gleanings.

I asked John if he thought the two-queen method was profitable due to the amount of labor involved. He replied "It really pays — it is the cheapest way, pound for pound, to produce honey."

As Chief Inspector, Mr. Long can work with his bees only on week ends and vacations. If he can produce 9,000 pounds of honey or more every normal year from 30 colonies, this method should be of interest to any of us with an adventurous spirit who like the thrill of trying something new. Then too, the thought of doubling or tripling our own previous production is quite a challenge.

**Advantages of Two-Queen Beekeeping**

Mr. Long lists a number of advantages for the two-queen system. First he finds the bees winter better, with the least amount of work involved, because the colonies are very large and supplied with lots of pollen and honey. Feeding sugar syrup, he feels, requires too much labor and is expensive.

Beekeeping cannot be profitable if colonies are permited to die from starvation during the winter. Mr. Long says he does not lose a single normal colony no matter how cold it gets — and it does get cold in central Wisconsin. No protection is given excepting a windbreak of trees and shrubs — another economy of labor. The large populations of bees cover many combs of honey and pollen. "Cold weather never kills a good colony, but many die in the North each winter from starvation" says John.

A most important factor is the large amount of pollen stored for winter use. The reason is: during the main honey flow from clover, which comes in early July, the two brood nests are united

1 A follow-up article by the author of "How to Produce Big Honey Crops" which appeared in the January issue.



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and the older of the queens disappears. When that happens, the same amount of pollen as before continues to be brought in for a time, but only enough to feed the larvae from one queen is used — the rest is stored. Mr. Long emphasizes that he leaves about 100 pounds of honey and 20 pounds of pollen in the five brood chambers shown in the pictures, for winter use. "This may seem like a lot of honey to leave but it is used in producing the large colonies of bees which bring in the big crops," says John.

**Winter Brood Rearing Important**

Another important advantage of this system John says, is that such large populations of bees can be developed by April, that colonies can be divided and another queen given to prepare the two-queen colonies. Brood rearing begins in January and is quite active in February and March if large colonies have pollen and honey available at all times. He has had these large colonies bring in a nice surplus of honey from willow and other early plants when only a few bees would be flying from weak colonies.

Unless colonies have large populations it doesn't pay to divide them. It would then be best to buy package bees and queens for starting the two-queen colonies. However, we would then be faced with the problem of getting enough pollen and honey for the package bees so they could build up rapidly. Actually, the problem of providing enough pollen and honey for early brood rearing is the limiting factor for success.

Mr. Long thinks it will actually take a beginner two years to get the system established correctly so as to have enough bees and pollen in each colony so they can be divided.

**Square Hive Bodies Preferred**

In the pictures we see that the hive bodies are shallow and square. They measure 20 by 20 inches and are 6⅝ inches deep and hold 12 frames 6¼ inches deep.* They will hold as much honey as a standard 10-frame hive body. John was very much impressed the first time he saw these hives being used by Dr. C. L. Farrar in Madison back in 1944 and the success he was having with two-queen colonies. He obtained some and after trying them out only one year, decided to change over to that size. He finds the square hives have many advantages. Note in the picture that each brood chamber has a one-inch auger hole entrance.

**Bulletin Available**

We can only describe two-queen colony management briefly here and urge all beekeepers interested to send for the bulletin: "Two-Queen Colony Management for Honey Production." Address: U. S. Bee Culture Investigation Center, c/o Agr. Research Center, Beltsville, Maryland.

This bulletin written by Dr. C. L. Farrar, now Chief of the Division, describes the method in detail with diagrams showing organization of two-queen colonies.

**How Colonies are Divided**

In early spring the brood will be in the upper of the five brood chambers. During the winter the auger hole entrances in them were open. In early April, several weeks before colonies are divided, Mr. Long reverses the brood chambers. The auger hole entrances are closed. This allows for brood expansions and the bees to become accustomed to the bottom entrance.

Before introducing the second queen the colonies are divided. John uses a short cut because he doesn't have time to locate each queen. He simply puts a wire screen (shown in Fig. 1) between the hive bodies of brood — so about half is above and half below the screen, opening the auger hole entrances to the upper unit only. At the end of four or five days he looks for eggs. The queen will be where he finds them. He kills all cells started on the other set of combs and introduces a new queen shipped in from the South, to this unit. He places it in the top position or above the screen. By having the auger hole entrances in the upper unit open, the old field bees go back into the lower entrance leaving only young bees to accept the new queen. He finds this very important for successful introduction. There must, of course, be plenty of honey and pollen available to both units.

* The two-queen system can be worked with the standard 10-frame equipment, as brought out in Dr. Farrar's bulletin.

Figure 1.

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Figure 1. Showing the screens used in the manipulation of the two queen system.

A slight variation in dividing the colonies is described by Dr. C. L. Farrar in the bulletin mentioned above, as follows: "A strong colony is divided temporarily into two units for the purpose of introducing the second queen. The bottom brood chamber should contain the queen, half the brood (mostly eggs and larvae), approximately 40 per cent of the population, and reserve honey and pollen. **Two supers of drawn comb are added** above the excluder. The upper brood nest is placed above these supers, separated from them by an inner cover with the escape hole screened.

"The upper brood chamber should contain three or more combs of mostly **sealed and emerging brood,** plenty of honey and pollen, and about 60 per cent of the original population. Some of the bees will drift back to the lower entrance to give a fairly equal balance to the two brood nests. The more mature brood is placed in the upper unit, because fewer bees will be required to protect the brood should there be a heavy drift back; also the emerging bees will strengthen the newly established brood nest and support the young queen. A one-inch auger hole just below the front hand hold provides an entrance for the upper colony. The time for making the division is usually five to seven weeks before the main honey flow — which is from clover."

**Two-Queen Organization**

So far the two units have been separated. They must soon be brought together as a **two queen** colony in order to provide the large field force necessary to bring in a large crop. Dr. Farrar describes his method of doing this as follows: "Two-queen organization is established by removing the screened inner cover when the top queen has a rapidly expanding brood nest, usually 10 to 14 days after the division was made. The bees in both brood nests should be sprayed with sugar syrup when the two units are united. This is not always necessary, but it is recommended as a safety measure that can be applied easily. The upper queen may require additional brood combs at this time. All upper brood chambers should have auger-hole entrances.

"Both the upper and lower brood

nests must have reserve honey and pollen even after the screened inner cover is removed. Brood rearing may suffer or the bees may **starve in one** when there is plenty of food in the other."

Mr. Long gives this word of caution: "Caution must be observed to prevent crowding of the lower unit with honey. The screen is replaced with an excluder on a day when the bees are flying well, but if a honey flow is not on, both units should be sprayed with thin sugar syrup."

**Swarm Control**

Swarming can, of course, become a problem and the value of the project be lost because of it. The two-queen co'onies have some advantage to begin with in that they have one young queen and another only a year old. However, during the swarming season colonies must be watched. About swarming, Mr. Long says, "Swarm control is seldom a problem if two empty supers are placed between the two units to prevent honey being stored in the lower brood chambers. Sealed honey should never be allowed to plug these two supers. I believe in at least five empty supers on the colonies two weeks before needed as a swarm control measure. If queen cells are found, the **brood chambers should be reversed** in each unit, queen cells destroyed and the empty supers above the brood should be reversed so that the most honey is in the supers on top.

"The two units are usually united from about July 10 to 20th, the heaviest brood chambers being placed on the bottom." It is not necessary to locate the queens; the upper or younger queen usually survives if she is the better one. This is an important time for the colony — when it has only one queen for brood rearing and the large population produced while there were two queens; a great deal of pollen (and of course, honey) can be stored. This will make possible good wintering. Vigorous late winter and spring brood rearing is necessary to produce the large populations needed for dividing the colony again into two units.

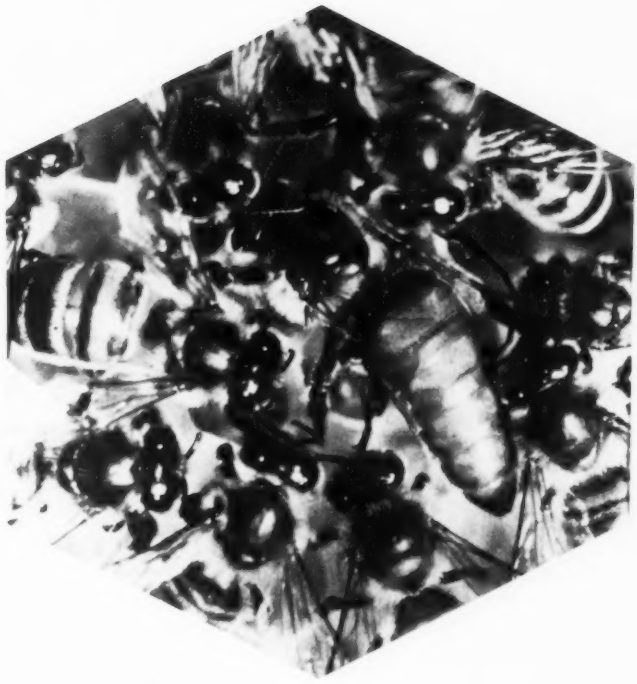
We have heard some beekeepers object to wintering large colonies because it takes such a large amount of honey to feed them. Actually, **it takes only about four or five pounds of honey per month to feed** a strong colony while it is not rearing brood. When large amounts of honey and pollen are consumed, it means that **young bees are being raised.** Without them we cannot produce a large crop of honey. It is therefore more profitable to feed honey and pollen to a colony to produce young bees than to extract and sell some of that same honey, leaving them in short supply which may result in interrupted brood rearing, or worse, starvation.

**Study Modern Beekeeping**

We highly recommend a study of the bulletin on "Two-Queen Colony Management" and a trial of the method by all beekeepers interested in modern beekeeping. Here is a challenge to greatly increase our colony production. Dr. C. L. Farrar states this fundamental principle in the bulletin: "Two-Queen colony management is based upon the principle that honey production per unit number of bees increases as the population is increased. Not only do strong colonies produce more honey than less populous colonies, but they produce more efficiently."

**KEEP GLEANINGS COMING**

"THAT BOY WILL GO FAR!"



# Finding the Queen

**KLAAS BOSCH**
**Haileybury, Ontario**

THE CIRCUMSTANCES affecting the search for queens change rapidly throughout the season, and they also vary in connection with the management and the type of production one favors.

One condition that remains completely under the control of the beekeeper, however, is the amount of self-confidence that he displays not to overlook the queen when lifting out the frames on which he may expect to find her. It is probably the major factor governing the progress of the work, especially when one has the task of going through a considerable number of hives for that purpose.

Who has not had the experience that everything seems to go wrong after a fumbling start? And what would you think of yourself, when your helper has gone through five colonies successfully, while you are still working on the first one?

The writer knows what it means, as it has happened to him. The bees sense the nervousness and they take over from there. They become cranky and

restless, and the beekeeper is not the leader any more, until he regains assurance that he is still the master.

When working with more than one brood chamber, an up-to-date record of yard work is beneficial in finding queens, since one has then a fair idea where emerging brood is to be found, making it easier to select the brood chamber to be checked first for the queen.

Before starting to look for her, these brood chambers must be separated quickly and with the least possible disturbance and avoiding excessive smoke. The practice of smoking the entrance might bring the queen to the top, but more often it just drives her to the wall.

Regardless of the manner in which the beekeeper removes frames from his brood chambers for inspection, when looking for the queen they must be lifted in quick succession, and the most important part is that he must feel sure of himself that the queen is not on the frame just lifted, if he did not detect her immediately. The prolonged searching look at the frames, so often observed when watching beekeepers at work, leaves the hive open longer than necessary. The bees become restless and it makes it easier for the queen to display her skill at hiding, especially when the hive is very populous.

For this reason, whenever the queen must be found, concentration to that task is essential for speed, and if other operations to the same hive are intended, they should be postponed until that first mission has been accomplished.

Some beekeepers develop a remarkable skill, and almost seem to be guided by a sixth sense, to spot the most likely location in a hive where the queen is, but even they may easily overlook her, if hesitation replaces confidence.

When looking for queens in overcrowded single brood chambers, as used in comb honey production, on warm and sunny days the writer has frequently noticed that these queens were active on the outside frames near the coolest side of the hive, and that on cold but sunny days the other side was favored.

Though at first accepted as a coincidence, this observation has been very helpful to speed up the search for queens.

In one case, during the 1960 season, in a yard of 30 hives, 26 of the queens were found on either the first or the second frame on the east side of the hives which were facing south, during the late afternoon of a warm day.

Readers, who may have had similar experiences with overcrowded colonies on warm days, are kindly invited to report these to the editor of this magazine, in order to establish further evidence of this queen behavior.

# A Bee Sting Without Any Bee

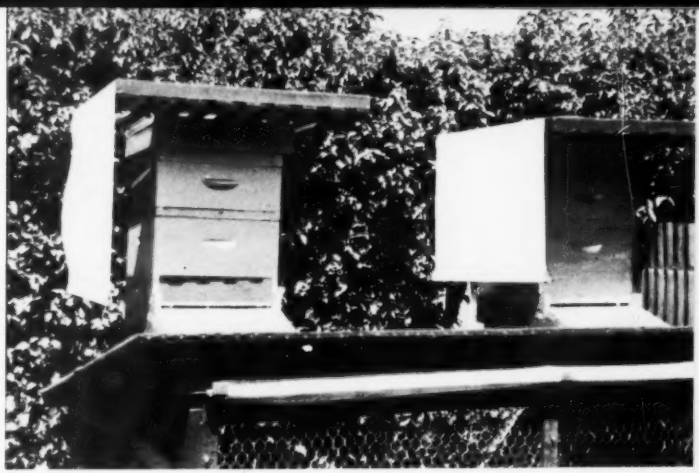
**ROY H. GIBBONS**
**Bentley, Illinois**

I HAD AN experience this morning that never occurred during my 40 years or more of beekeeping.

I hadn't been around bees for about 18 hours, but coming in from outdoors I sat down and laid my hands, fingers outstretched, on my knees. I felt a sting on one finger and upon examination I found a bee stinger (with the sting sac attached) in my finger. No bee or dead body was in evidence anywhere and strict search failed to locate any. No buzzing was heard.

The only thing that I can figure out was that the bee had left the stinger in my trousers and when my hand touched it, it entered my finger. It is preposterous to think that a bee would get on my trouser leg and stay over night for 18 hours. I have often heard that a dead bee will sting if you step on it or otherwise give the stinger an opportunity to enter the flesh. But this has me puzzled.

Has anyone ever had a similar experience?



# Bees On A Roof

**C. J. KOOVER**
**Altadena, Calif.**

AMATEUR BEEKEEPERS in cities and suburbs may well consider putting their hives of bees on the roof. Any roof will do. Garages with flat roofs are ideal. Roofs with a gentle slope like those of garden tool houses or chicken houses serve equally well. Neighbors who previously objected to having bees next door suddenly seem to become unaware of having bees close by. Out of sight, out of mind, seems to be the answer.

Although our garden is surrounded by high hedges the bees did a certain amount of hedge hopping when they were kept on the ground. Now that they are up on high they take off, circle and are gone. They seem to be less interested in carrying water from the neighbors' bird baths, fish ponds or leaky faucets. If they still soil neighbors' wash hanging on the line after having been confined due to rainy weather it must be of people living farther away and the bees don't get the blame.

Roofs have excellent air drainage which helps to keep the hives dry. There is complete freedom from ants, spiders, toads and skunks which caused a certain amount of annoyance to the bees. The bees seem to be more gentle and less irritable. This may be due to their being located in the full sun. Although roofs do become hot in the middle of the day during the summer months they cool quickly.

However, during the summer the hives should be shaded with shade boards. The whole roof becomes a landing field on cold days and bees which can barely make the roof on such days take full advantage of that. They land anywhere on the roof during cold or windy weather, rest awhile and then fly up to the hive entrance. But best of all the garden is completely ours now and no one in our household has had bees bumping into his face as happened before.

Whitman Coffey uses a form for nailing parts of shipping cages together. It's an assembly line production job.

# Queen Rearer and Package Bee Producer

**A. B. KENNERLY**
**College Station, Texas**

**"He looks at the queens in the colonies and notes their shape. He likes a long, large queen and an active one. If she meets these requirements, he looks at the brood pattern."**

"TRANSPORTATION has made the most progress of any phase of beekeeping to aid the queen breeder and package bee producer," says Whitman Coffey, "but strangely enough, transportation is still our major problem!"

Whitman Coffey is in good position to know the problems, for he has been shipping queens and package bees all over the country since 1926. His beekeeping experience precedes that — back to 1920. His main headquarters are in the small town of Whitsett, Texas, south of San Antonio.

"My father had bees, and my brother and I got started from those up in Burnet County," Coffey explained. "We came down to Whitsett back in 1924 and bought out a beekeeper located here. We were teaching school at the time."

Believing that they could make some money raising queens, they gradually got into that business, although they continued to raise and extract honey, selling it under their brand name "Bee Sweet." This business reached its peak in 1946 when Coffey had 4,000 colonies.

In 1925, H. B. Parks, apiculturist, and A. H. Alex, queen breeder for Texas A. & M. College, had published their bulletin, "Suggestions on Queen Rearing."

"I was able to learn much from Mr. Parks and Mr. Alex," Coffey revealed. "They were both working in the laboratory at San Antonio."

Coffey likes the area around Whitsett for rearing queens. It's a part of the Rio Grande Plains, covered with a heavy growth of brush such as mesquite, huajillo, catsclaw, and granhena, all of which are good sources of honey. Huajillo is especially good. Along with the variety of brush, there are good annual plants. The country is also plagued with periodic drouths that can reduce honey flows almost to zero. That's why Coffey may load his bees on trucks and move them to alfalfa fields of New Mexico or Colorado.

Two paragraphs in the bulletin by Parks and Alex may have sparked an interest in queen rearing. "Raising queen bees is interesting and profitable work," the authors wrote. "It will well repay any beekeeper owning 100 or more stands of bees to maintain a small queen yard, as this will enable him to secure a stock of young, well bred queens at the time he needs them.

"There is no division of agricultural science that requires closer adherence to a system and more attention to the minute details than does queen rearing. A single wrong step or the delay of an hour in an operation may upset the routine and interfere with the production of a whole set of cells. Commercial queen breeding on a large scale should not be attempted by anyone who has had no experience. Every year brings on a new crop of commercial queen breeders, but only a very few remain for years in the business. The failure is usually due to the fact that the breeder does not adhere to system in his work and is negligent in his business methods."

Coffey accepted the challenge and has been among the few who have stayed with queen rearing.

"My system is mostly the Doolittle method of queen rearing," Coffey explains. "We use artificial cell cups, no wooden bases at all. We just graft into them and cut them off the sticks before we put them in the mating hives. I've never used the method of raising queens above queen excluders. Nor have I used incubators, although I think they are all right."

For breeding colonies, Coffey selects the highest honey producers among his Italian and Caucasian bees. At this time, they would be selected from more than 1,500 colonies. He looks at the queens in the colonies and notes their shape. He likes a long, large queen and an active one. If she meets these requirements, he looks at the brood pattern. If it's spotted he just skips that colony. He looks for a good, solid pattern of brood, without burr comb.

This is the panel type truck which Coffey recently purchased for grafting queens on cloudy days. He will suspend a light from the ceiling, operated off the truck battery, to see the larvae. The truck will also carry queen rearing equipment and supplies to his three yards.

Coffey got his early stock of improved bees from H. B. Parks at the Texas A. & M. laboratory at San Antonio. "I thought much of his ability and we got some wonderful stock from him," Coffey recalled.

Worker bees in the colony are also important. Coffey selects colonies where the bees are of uniform color. He wants them gentle on the comb and not inclined to "boil over." However, he doesn't want them too gentle since such bees are not inclined to protect themselves and soon become the victims of insects, predatory animals and thieves.

Coffey likes to select as his breeding colonies those where worker bees start work early in the morning, go directly from the hive to the honey flow and return quickly to the hive, taking advantage of every kind of honey flow. Like most other beekeepers who have been in the business a long time, Coffey has tried the 8 and 12-frame hives and has settled to the 10-frame as being the most practical.

Coffey transfers or grafts the young larva when it is two days old, putting it in the cells which have had royal jelly inserted. He mixes the royal jelly with a little water before putting it in the cell. He believes one of the biggest problems in queen rearing can be overcome by working fast and putting them in a strong colony to get them accepted. He tries to have plenty of bees and keeps them well fed.

One way he checks on the quality of the new queen is to note if there is any royal jelly remaining in the cell when the queen emerges. If there is none, he concludes the young queen has been insufficiently fed and should be discarded.

First of the annual production of 5,000 queens is started about March 1. The season continues through March, April and May, then drops off through August when it ceases until the next season. Like most other queen breeders, he has his regular customers, but picks up new ones by advertising in the beekeeping magazines. He has used

some direct mail in the past and kept a long mailing list of names of beekeepers for this purpose. His best advertising now comes through bee magazines, and he sells all the queens he can raise.

Most of the annual production of queens is sold with package bees, but about 1,500 are sold without package bees. These go to beekeepers who want to requeen their present colonies. Some tested queens are sold, although the largest market is for untested queens, which are young mated queens.

Transportation has improved since Coffey first started beekeeping 40 years ago. Good highways make it possible to truck bees and bee products most any place. However, it's still a problem for the package bee producer. Unless the order is for more than a half truckload, it's difficult to move them. In the early days, package bees could be shipped by express, but express costs have gone up sharply in recent years. Some package bees are shipped by parcel post. The postmistress at Whitsett credits Coffey's parcel post shipments with bringing her an increase in salary last year.

Jet airlines may offer the solution to transportation in the package bee business. "I've been checking with jet airlines for a fast route to the north, but I haven't been able to work out anything yet. I think it's coming in the future and will provide a fast, reasonable cost service," Coffey predicts.

Timing is one of the biggest problems when working package bees and queen rearing together. The difficulty lies in having queens ready, and plenty of young bees in the strong colonies for packages at the same time the orders are to be filled. Coffey builds his colonies to the swarming stage which is the best time for taking off the young bees.

"Sometimes they get to the swarming stage before we are ready to ship," he explains. "When this happens, we divide them before they swarm. Or we give them all the room we can if that will hold them in the hive. Dividing them is a last resort."

Then, sometimes a big honey flow may start in April during the middle of the package bee season. It's difficult to work the colonies when they get heavy with honey. Bees fill up all of the brood space with honey leaving little for egg laying. Coffey tries to manage his colonies so they will not constrict the queens.

Several years ago, he lost about 90 percent of one batch of queens when a cold norther blew in while the queens were out on their mating flights. They never returned. Sometimes, those that do return under such conditions turn out to be drone layers.

"Queens on their mating flights may fly long distances," Coffey observes. "This is one of the problems in queen rearing because the longer the distance, the more difficulty they have in returning, and there's always the possibility they will mate to an inferior drone."

Grafting queens on cloudy days presents a problem. It's difficult to see the tiny larvae. Coffey has recently purchased a panel type truck in which he will ride to his three queen yards. The truck will be equipped with a light in the top, enabling him to do all of his queen grafting in the truck. This also provides protection in misty weather as well as providing an easy means of carrying all of his equipment for queen rearing.

There are several insect enemies that plague queen breeders in Texas. These are spiders, grasshoppers and robber flies. Coffey has his most trouble with robber flies. They catch the queens and in late summer many of the virgin queens may be killed by robber flies.

Parks and Alex reported their experience with robber flies observing that they seldom range over more than two or three acres. If they become numerous enough to cause queen losses, swatting the flies each day for two or three days will almost end the trouble. They will generally not build up again that summer.

There's a story making the rounds among Texas beekeepers about the fellow who mated his queens to lightning bugs so they would work at night. One day, he noticed in one of his colonies that all of the bees were paired off, pushing each other around. Observing them more closely, he learned the trouble. Their batteries had run down.

Bees in the Coffey apiaries do not work all night gathering honey. But they do work hard enough during the day to bring in good surpluses.



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The newly elected officers of the American Beekeeping Federation. Left to right: Joseph Moffett, secretary-treasurer; Henry Hansen, president; and G. C. Walker, Jr., vice president.

# The Omaha Meeting

THE AMERICAN BEEKEEPING FEDERATION held its 18th annual convention at the Paxton Hotel in Omaha, Nebraska, from January 30 to February 3. Relatively good weather prevailed through the week and the attendance was good.

We call it the Omaha meeting but actually the national meeting is a series of meetings held by the various segments of our industry. To report the convention in its entirety would fill a large book. Therefore, the purpose of this report is to inform the members of the Federation who were not able to attend the convention of the business that transpired during the session.

The first two resolutions extend sympathy to the families of members who have passed away during the year and

give recognition to those who made the convention a success.

The third resolution was submitted by the Federation Executive Committee and requested that the expense allowances for committee members attending the National meeting be reduced from their previous rate.

Resolution No. 4 was submitted by the apiary inspectors of America and was a repeat resolution from last year requesting that the Agricultural Research Service send a qualified apiculturist to Europe to study Acarine disease to obtain the necessary information to develop a procedure for dealing with the Acarine mite should it be found in this country.

The fifth resolution also dealt with the Acarine mite and requested that the American Beekeeping Federation support a change in the Honeybee Act of 1922 which prevents the importation of live honeybees (**Apis mellifica**) into the United States by amending it to include all species of Apis including Apis indica, Apis dorsata and Apis florea. These species are not presently barred by the act.

Resolution 5A was so classified because of its similarity to the previous resolution but in essence it urged that the United States Department of Agriculture grant permits for the importation of Carniolan and Caucasian breeding stock. Since the adult bee is barred from entry by the Honeybee Act of 1922 this resolution would pertain to other than the adult honeybee.

Resolution No. 6 was submitted by the Michigan Beekeepers' Association and it favored a requirement that all countries exporting honey to the United States have the country of origin printed on the label of each container.

No. 7 requested that all state resolutions of national interest be submitted to the Federation secretary before August 31 so the resolutions can be well publicized before the Convention. This resolution does not prevent any resolution from being initiated at the Convention.

Resolutions 8 and 9 failed but Resolution No. 10 favored the elimination of the honey price differential between eastern and western states which is now in effect in the present honey price support program and passed.

No. 11 requested that all members pay their dues promptly so the Federa-

Nebraska's governor, Frank Morrison congratulates Elaine Prather of Tennesse, whom he has just crowned American Honey Queen for 1961.

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Ed Burleson (center) past chairman of the American Honey Institute board of directors, congratulates Baxter Woodman, the newly elected chairman. Mrs. Grace will continue as director of the Institute.

tion would be spared its financial embarrassment of the past year.

Resolution 12 asked the United States Post Office to print a commemorative stamp in behalf of the beekeeping industry.

No. 13 recommends that Federation members purchase foundation made only of waxes of 100 percent beeswax.

Resolution No. 14 authorized the purchase of an award to be presented to the Federation member who travels the greatest number of miles to attend the annual convention.

The 15th Resolution presented by the Colorado Beekeepers' Association requested that the U.S.D.A. and Dr. White continue their work on dehydrated honey.

No. 16 states that since the Bureau of the Census in the last census failed to obtain information on the beekeeping industry as it has done since 1850 that the Federation request they reinstate the beekeeping census in the next enumeration.

Resolution No. 17 applauded the work of the states that supported the American Honey Queen program.

Resolution No. 18 states that since the use of carbolic acid in the removal of honey has not been entirely satisfactory it is requested that the United States Department of Agriculture conduct a research project to find a more satisfactory method.

No. 19 requests that the U.S.D.A. make a survey of the problems of the beekeeping industry to determine the research facilities required to keep our industry in pace with the rapid changes in agriculture.

Resolution No. 20 calls attention to the severe losses suffered by beekeepers from the indiscriminate spraying of insecticides and suggests the industry support legislation which would require spay applicators to carry insurance against property damage caused by their insecticides.

Resolution No. 21 concerned the Federation dues. During the coming year the minimum dues will be $5.00 or four cents a colony for beekeepers who have more than 125 colonies, thus a 500 colony operator would pay $20.00 dues. Anyone paying $50.00 or more will be designated as a sustaining member. The dues for bee supply manufacturers and honey handlers and dealers will be $50.00.

Also accomplished during the business meeting was the election of officers. Henry Hansen of Iowa was elected President, George Walker, Jr. of Texas was elected Vice President and at an executive committee meeting the next day Joseph Moffett of Colorado was reappointed Secretary-Treasurer.

The next meeting of the American Beekeeping Federation will be held in Biloxi, Mississippi.



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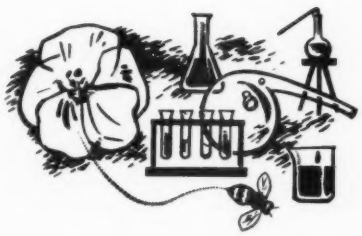

# Research Review

**DR. ROGER A. MORSE**
**Research Editor of Gleanings and Ass't. Prof. of Apiculture**
**Cornell University, Ithaca, N. Y.**

## A Bee Repellent to be Combined with an Insecticide:

DR. CARL JOHANSEN of Washington State Univ. reports that he has had good success with a bee repellent which is made by the Phillips Petroleum Company. This repellent was combined with two insecticides (Dieldrin and Sevin). In both cases, the honeybees and bumblebees were repelled from alfalfa which had been treated for six to eight days. Both Dieldrin and Sevin have proven to be extremely toxic to honeybees in the field and are amongst the most difficult materials with which beekeepers have to contend.

The repellent has no name as yet and is still known only by its experimental number (R-874). Another research worker had reported earlier that the material was not effective in the field but the dosage was lower than that used by Johansen and the method of application somewhat different.

Further testing of the material is undoubtedly necessary before its use can be widely recommended. It would appear from this report, that within a year or two it may very well be possible to have a material which could save much financial loss to beekeepers.

Johansen, Carl.
Bee repellent combined with Dieldrin or Sevin in bee poisoning tests in alfalfa. Journal of Economic Entomology 53:1010-12. 1960.

## Encouraging Production of the Alkali Bee:

BEEKEEPERS throughout the midwestern states are familiar with the alkali bee and the fact that it is an excellent pollinator of alfalfa. In some areas the bee is more important than in others, but in general it is not found in sufficient numbers to be relied upon completely as a pollinator of alfalfa.

A report from Oregon State College indicates that it is now possible to produce artificial beds (that is, soil beds) and to increase the populations of the alkali bee eight fold over the most dense populations which have been found living naturally in Oregon.

Fair size soil plots are necessary to produce the alkali bee in numbers. The propagation of this bee may very well have an effect on the renting of colonies of honeybees in alfalfa seed producing areas.

Stephen, W. T.
Artificial bee beds for the propagation of the alkali bee, **Nomia melanderi**. Journal of Economic Entomology 50:1025-30. 1960.

## Beekeeping in Brazil:

PERSONS INTERESTED in beekeeping in Brazil and other South American countries may be interested in a new beekeeping bulletin from that area. The chapter titles include honey plants, honey extraction, beeswax, migratory beekeeping, pollination, honey, etc.

Kerr, Warwick E. and Erico Amaral.
Apicultura cientifica e practica. Directoria de Publicidade Aricola. Sao Paulo. 1960.



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# NEWS REEL

Which of these three gentlemen is the beekeeper? That was one of the questions asked recently on "To Tell the Truth" a Nationally Televised program. From left to right: Roland T. Sykes, President of the Texas State Beekeepers' Association; Bob Blick, Manager of Luau – 400 Restaurant in New York City; and Harold Riddle, Vice President of Sam Schulman Co., makers of T.V. pillows.

This excellent exhibit was on display at the 1960 Oklahoma State Fair. The exhibit was designed and assembled by the Northeastern Oklahoma Beekeepers' Association. The attendants are Mr. and Mrs. James E. Grayson: Mr. Grayson is the Sec.-Treas. of the Association and Mrs. Grayson was the 1960 Honey Queen.

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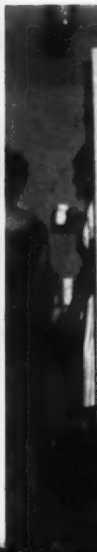
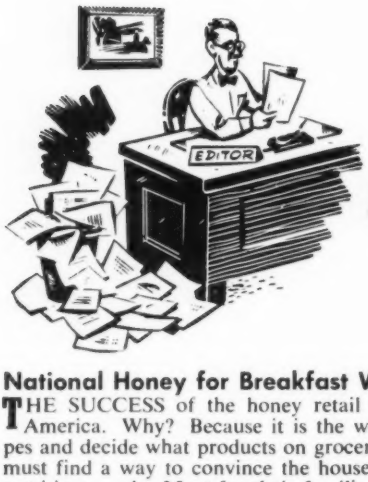


Mrs. Hampton displays a beehive hat, an original creation by her husband. Mr. Shelby Hampton of Salt Lake City, Utah, holds his inspiration, the straw skep. Mr. Hampton had an excellent exhibit at the Federation Meeting at Omaha. He also gave gifts of honey and ceramics to Nebraska's Governor, Frank Morrison. and to the 1961 American Honey Queen. Photo by World Herald.

Mr. Gerardo Rodriguez Hevia, second from right, is shown receiving a trophy awarded to the best beekeeper in Puerto Rico. Mr. Roberto Huyke, Extension Director, is making the presentation. Watching on the left is Mr. Cesar A. Calderon, Head, Animal Husbandry Division, and on the right is Mr. Julio Pagan Padro, Beekeeping Specialist of the Extension Service. The trophy was donated by The A. I. Root Company.




# Editorials

## National Honey for Breakfast Week Begins Easter Sunday

THE SUCCESS of the honey retail business rests largely with the women of America. Why? Because it is the women who prepare breakfasts, collect recipes and decide what products on grocers' shelves are worth buying. Therefore, we must find a way to convince the housewives and mothers that honey is delicious, nutritious, and a **Must** for their families.

Mrs. Harriett M. Grace, Director of the American Honey Institute, Madison, Wisconsin, does much each year to publicize our product on a National scale, but this special week affords us an opportunity to promote honey in our own community. Store exhibits are excellent ways to display honey at this time. The Institute will gladly furnish recipes and counter cards at a very nominal cost.

Contact the home economists in your local schools, also the girl scout leaders, 4-H club leaders, and gas company home departments. These ladies know the assets of honey, and, if reminded, they will gladly include a recipe or two on their weekly agendas.

Newspapers, T. V. and radio stations are usually eager to help promote any kind of a National week, free of charge. Why not exploit these medias in your own city? You may be surprised at the results.

There are many ways to promote your honey. Initiate your own ideas.... ....lend, display or give away your honey.....but by all means.....take advantage of this opportunity and advertise during NATIONAL HONEY FOR BREAKFAST WEEK.

## Standardization of Bee Shipping Cages and Methods of Installing Bees Needed

THE ARTICLE by Paul Cutts entitled, "History of Packaging Bees" in the February 1961 issue brings out the desirability of using shipping cages that are fairly uniform in construction and fulfill their purpose in the bee shipping business. As brought out in the article, there have been a number of changes in the construction of shipping cages during the years. This is to be expected.

The use of sugar syrup, instead of bee candy to furnish food for bees enroute marked an important advance in bee shipping practice. Bees need moisture or water enroute, especially during hot weather. The syrup, if it is not too thick, furnishes some needed moisture. Even though there are differences in construction of bee shipping cages, some having four corner posts and screened sides and ends and others having solid ends with screened sides, the cages now in use are fairly uniform.

It would appear, however, that there should be a fairly uniform method of shipping the queen with the package of bees. Practically all the shippers cage the queen safe using a cork or piece of perforated zinc on the candy end of the cage. Some shippers cage the queen safe with no attendant bees or candy in the cage. When this is done the bees will feed the queen through the wire screen of

the cage enroute. Sôme shippers cage the queen, with a few attendant bees, also candy in one end of the cage in order that the beekeeper who receives the bees may introduce the queen to the package of bees after it is installed in the hive. A piece of metal or cork is placed over the candy end of the cage so that the bees cannot release the queen enroute.

Since there are so many beginner beekeepers these days it would appear that directions for installing the package should be quite explicit. The majority of beginners are afraid of bees, and imagine they will sting when released from the cage. As a matter of fact bees received in packages are quite docile and are not likely to sting when handled carefully, even without smoke. These bees are usually filled with sugar syrup and not in the mood for stinging.

There are different methods of putting a package of bees into a hive. Some remove the cage containing the queen and hang it between two frames near the middle of the hive, then remove the feeder can and place the cage of bees in one side of the hive after a few frames are removed to make room for it. Normally the bees should leave the cage and cluster on the frames, around the queen. The bees should, of course, be fed sugar syrup or combs of honey if available.

It is difficult to write directions for installing package bees that will suit all situations. In some instances bees in the far north may be received during a snow storm. The writer had this experience some years ago. It was necessary to take the packages of bees into the basement near the furnace, also to replenish the cans of syrup which were practically empty. In due time when the weather moderated, the packages were taken outside and put into hives.

Those inexperienced in hiving packages should keep in mind two things; first, feed the bees lavishly until nectar and pollen are available in quantity, and second, hive the bees late in the afternoon if possible, at which time they are not likely to drift from one hive to another.

## Importance of Large Winter Bee Clusters

BEEKEEPERS KNOW THAT a normal colony of bees forms a cluster on the combs when cold freezing weather comes. Not all beekeepers have a thorough understanding of the construction of the winter cluster and what goes on inside of it throughout the winter. Even beekeeping experts may not agree on all points pertaining to the winter cluster.

At any rate, we know, or think we know that when the temperature within the hive reaches 57°F., the bees begin to form a cluster and as the temperature lowers the cluster draws together more tightly. The bees on the outside of the cluster, usually referred to as the periphery, form sort of a rim consisting of bees clustered tightly with their heads pointing to the center of the cluster. This rim is approximately two or three inches in diameter. The bees in the center clustered rather loosely, generate heat by muscular activity, kicking their legs and flapping their wings. A considerable portion of this heat generated is retained by the bees in the rim or periphery of the cluster. Thus a cluster of bees during the winter generates its own heat. If it were not for this fact the bees would die, since bees are said to be cold blooded insects.

As the winter advances the cluster slowly moves upward onto fresh honey in the combs. This emphasizes the importance of having an abundance of honey in the combs directly above the winter cluster.

There is one important fact in connection with the winter cluster that perhaps is lost sight of, namely, there is a law in physics which states, in effect, that a large sphere has relatively less surface than a smaller sphere—in other words, the larger the sphere the smaller the surface. Therefore, when comparing the winter cluster of bees with a sphere, there is less chance for heat generated by bees in the center of a large cluster to escape than there would be in a smaller cluster, because the smaller cluster has a relatively larger surface than the larger cluster and consequently more heat would escape.

A considerable percentage of colonies throughout the country, especially in northern latitudes are lost during the winter because the clusters are too small.

# *Live and Learn*

**PROPOLIS PETE**

WHEN I WAS a kid, I knew a lovable old character who got a great deal of pleasure out of reminding us that "We don't have winters like we used to have them". I wish that he were here to enjoy this one.

As of this writing, I haven't been near my bees for at least a month. I mean that relatively, for I can see the tops of the hives from our kitchen door. But by a freak of the weather, they are completely surrounded by snowdrifts that are chest high, and I don't have snow shoes. Neither do I have the ambition to shovel a path to them. Even if I did, there wouldn't be anything I could do for them. They still have their covers on, thanks to a cement block on each one, and that will have to do until I can get at them.

In this neighborhood, our winters are not too severe. Maybe once or twice the thermometer will flirt with zero, but seldom get there. On an average there will be at least a partial flight within a period of 10 days. We have a lot of wind from the west and north but the windbreaks are so efficient that if you scrooch down by the hives when there is a strong wind blowing, you feel only gentle zephyrs. But this year, wow! I sure am thankful for those high snowdrifts. My thermometer read six below this morning when I got up. And for two weeks straight it hasn't been up to freezing.

A hard winter doesn't necessarily mean trouble for the bees. If you left them with more good clean stores than they need, and give them some protection from the wind, the chances are that they will be all right. In mild weather they are active and are likely to use up more stores than when they are clustered tightly. Also, they are likely to raise more brood than they need for replacements, so that when the time comes that they should build up fast for the honey flow, there isn't enough food to keep up the pace they should.

The only winter that I can recall that was worse than the present, was the winter of 1935. That year the pattern was very similar to this one, and the bees came through it as good or better than they have done since. I kept a diary of my beekeeping then, and, looking back through the entries I find that actually my best average production followed the cold and snow of that winter. I have had colonies produce as much as 180 pounds in one season, but they were freaks. I average around 50 pounds for the entire yard almost consistently, but in that particular year my average was 75 pounds, with a high of 120 and a low of nothing for one of the colonies that just simply would not take off.

In that diary, I also kept track of the dates of blooming for the various plants that provide my honey and pollen. And, in studying it I am rather surprised to find that mild winter or hard winter, early spring or late spring, the blooming dates don't vary more than 10 days. The very first plants may be two weeks earlier or later, but as the season wears on the interval shortens until, by the middle of June, plants come into yielding at almost the same date.

Another good thing about a cold winter, when there is snow cover, is that there is no heaving. When the ground is bare, and the sun gets higher, there is a thaw even when the temperature is way down. It melts in the daytime and freezes in the nights, and I have seen tulip bulbs that I planted eight inches deep lying on top of the ground just from this heaving action. You don't get that when the temperature changes are slowed down by being covered. You get the same effect from mulching, but snow is better, because when it melts it puts water in the ground, and hereabouts that is one of the things that we need plenty of.

I am wondering how my package bees will work out. They are ordered for delivery early in April. Even though the season evens itself out by the middle of June, early April is the time

(Continued on page 187)

Basswood, Linden (**Tilia americana**).

# Let's Talk About HONEY PLANTS

**DR. HARVEY B. LOVELL**
**University of Louisville,**
**Louisville, Ky.**

BASSWOOD, or linden (**Tilia americana**). One of the best trees for honey yield is linden. It grows fast and produces a fine, soft wood which is easy to work. This wood has often been used for comb honey sections. Basswood makes an attractive shade tree and honeybees work the numerous flowers so rapidly and eagerly they sound like a swarm. Linden blooms later than most other honey-producing trees, at a time when colonies should be strong enough to produce a surplus. If cities could be persuaded to plant linden along their streets and in their parks, the honey yield in such areas would be greatly increased.

Basswood honey is water white and although sometimes described as strong flavored it blends nicely with clover honey to the improvement of both. Basswood was formerly an important honey plant throughout the eastern states before most of the trees were cut for lumber. Nectar is secreted by the sepals and accumulates in large drops in the cup-shaped sepals. The tree can easily be identified when in bloom by the yellowish bracts to which the flowers and later the seeds are attached.

**Maryland.** Gary De Young asks about the value for honey of azalea, mock orange and lilac. Bees rarely work azalea and it belongs to the rhododendrons which are thought by some to produce poisonous honey; mock orange is often worked freely by bees but it is not known to produce a surplus; lilac is not mentioned in any list and is probably of no value although the flowers have a sweet odor and may contain some nectar. Bees do not seem to work the two varieties of lilac I have growing in my yard.

A honey dealer in New York City writes to ask if I know of any beekeepers with wild raspberry, Phacelia or rattan honey for sale.

Rattan honey is made in southern Louisiana and east Texas from a large vine. It is dark amber but well flavored honey.

Phacelia grows in the Southwest, particularly in New Mexico. The honey is usually described as greenish in color.

Wild raspberry used to be abundant in northern Michigan and adjacent states. It springs up after a forest has been cut down completely, but under modern methods of selective cutting it is rarely abundant and the honey is becoming rather rare. Jack Devell used to make raspberry honey in northern Michigan. The honey is water white and very mild and popular.

Anyone having any of these three kinds of honey to sell please write me and I shall send your letter to the New York dealer.

**Vermont.** Robert M. Meade writes from White River Junction that he is looking for plants which are good for both wildlife and honeybees. He says "My list includes coralberry, Russian olive, and Cotoneaster". Other possible species which will grow over a wide area are silky dogwood, the cherries (choke-cherry, black cherry, and fire cherry), raspberry, blackberry, firethorn, shadbush (serviceberry), Siberian peatree, **Eleagnus** spp., hawthorne, shrubby lespedeza, false indigo (**Amorpha fruiticosa**), and Vitex.

**New Mexico.** Dennis T. Willis of Tucumcari asks what shrubs could be planted as a shield between his bees and his neighbor's yard. He adds that he lives in a very dry climate. Mesquite grows well in the dry climates of the Southwest and is an excellent honey plant. Senisa is planted along the shoulders of the roads of west Texas to prevent erosion. It grows into a very thick shrub and is a fine honey plant. Tamarix grows luxuriantly along irrigation ditches all through New Mexico and Arizona and would make a nice hedge if kept wet enough, but it makes a dark honey. A visit to a horticulturist in your area may be helpful in determining what is available at reasonable prices. **Vitex negundo** might make a good hedge. It is worked eagerly by bees over a long period of time.

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*A Book Review*

## "Beekeeping in the Tropics"

THE AUTHOR, Francis G. Smith, provides an excellent reference and guide book for all of those who are interested in beekeeping in the tropics.

He relates the potentialities of the tropical area in Africa, Asia and South America for the large scale production of honey and beeswax. He particularly emphasises the practical and economic aspects of beekeeping under conditions that confront an apiarist in the tropics.

Much of the book is based on the author's personal experiences in Africa and Europe, plus many experiences of other beekeepers who are entirely dependent for their livelihood on the crops of honey and beeswax they obtain in the tropics.

This book is written to hold your interest. It is beautifully illustrated with many detailed, colored, and black and white pictures.

You will find this book fascinating and well worth adding to your bee library.

Published in Great Britain, Western Printing Service, Ltd., Bristol, 1960. Price $12.50.

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Extra good are these honey barbecued beef loaves.—Photo courtesy of Kellogg Co.

# Extra Good

MRS. BENJ. NIELSEN
Aurora, Nebraska

LEAFING THROUGH the magazines and newpapers we read such luscious sounding recipes, and the colorful pictures tempt us to try new ideas. We start thinking that maybe we are getting "in a rut" with our cooking. And just maybe we might improve on some of our old favorites. So we bestir ourselves, try these newer versions, (and isn't it fun!) only to hear the verdict, "I like it better the way you always fix it." So back we go to the old tried and true — for awhile. But hope springs eternal and soon we are tempted again. And may the offerings this month prove acceptable!

In preparing the meat, a darker, stronger flavored honey may be used; with the second a milder flavored honey is recommended.

**Honey Barbecued Beef Loaves**

Four cups cornflakes, or 1 cup packaged cornflake crumbs, 2 eggs, slightly beaten, 1 cup milk, 2 teaspoons salt, ⅛ teaspoon pepper, 1 tablespoon chopped onions, 1½ pounds ground beef, 1 cup chili sauce, 3 tablespoons honey, 1½ teaspoons dry mustard, and 1½ tablespoons vinegar.

If using cornflakes, crush into fine crumbs. Combine cornflake crumbs, eggs, milk, salt, pepper, onions and ground beef; mix thoroughly. Shape meat mixture into nine small loaves. Place in greased shallow pan. Combine sauce ingredients; spoon over loaves. Bake in moderate oven, 350°F. about 50 minutes, basting loaves with sauce occasionally during baking.

**Honey Sweet Potato Puffs**

Six sweet potatoes, baked in aluminum foil, ¼ cup honey, 2 tablespoons butter, dash each nutmeg and salt, ½ cup milk, and 1 unbeaten egg.

Scoop out centers of potatoes, mash. Add remaining ingredients and whip until light. Fill shells with mixture, dot with butter, bake in hot oven until lightly browned.



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# A Survey of American Honeys

## 5. Effect of Area of Production on Composition [1/]

JONATHAN W. WHITE, JR.
Eastern Regional Research Laboratory
Eastern Utilization Research and Development Division
Agricultural Research Service, United States Department of Agriculture
Philadelphia 18, Pennsylvania

Number five in a series of ten articles on different honeys of America.

IN THE FIRST FOUR articles in this series we have discussed the need for new information about the composition of honey and presented a new table of average composition of honey. It has been shown that the same sugars are always found in honey, at least among the monosaccharides and disaccharides, no matter what type it is or where it is produced. It has also been noted that from one year to another, some variation, particularly in granulating tendency, dextrose and moisture content, may be expected.

Another of the many factors that might influence the composition of honey is the area of production. How much difference can we expect between honey of the same floral type grown in different locations, either relatively close together or widely separated? In this instance a number of factors may have an influence, with the final honey composition reflecting the interplay of differences in soils, rainfall, sunshine and other weather factors, different varieties of plants, different farming practices, different minor or competing floral sources, and so on.

Several comparisons of samples may be made to get some information on this point. With our honey samples from 176 floral types and blends of known composition, from 47 of the 50 states, we can make several types of comparisons to clarify these effects.

### Valley and High-altitude Alfalfa Honey Compared

It is well known that Imperial Valley alfalfa honey is different from intermountain alfalfa honey in color and flavor, being darker and of more pronounced flavor. Beyond that, little is known of other differences that might exist between these two types of alfalfa honey. In Table 1 we find such a comparison. The four valley alfalfa samples which were averaged were from Southern California; the eight intermountain samples originated in Wyoming, Utah, Montana, Idaho and Colorado.

In addition to the flavor and color differences already known, it appears that the valley alfalfa is slightly lower in levulose and slightly higher in dextrose. It also seems to be more prone to granulate. The ash content of the valley alfalfa honey is over twice as high as the intermountain honey. It shows considerably greater content of lactone and acid, but their ratio does not differ from that of the high-altitude alfalfa honey, and the pH value is the same. Otherwise the two types of honey are similar.

When these figures were examined with the aid of statistical procedures, it

1/ This is one in a series of articles describing a large-scale study of the composition of honeys from over the United States. Complete data interpretation and conclusions will appear in a forthcoming Department of Agriculture publication.

was found that none of the differences in Table 1 (except granulating tendency) are statistically significant. Thus we found no real difference in composition between alfalfa honey produced in these two areas.

**Table 1. Average Composition of Alfalfa Honey from Diferent Areas**

| Color | Intermountain Light half Extra White | Imperial Valley Dark half Extra Light Amber |
|---|---|---|
| Granulating tendency | ¼-½" layer | Complete |
| Moisture (%) | 16.4 | 15.8 |
| Age at anal. (mo.) | 8 | 16 |
| Levulose (%) | 39.55 | 37.88 |
| Dextrose (%) | 33.28 | 34.11 |
| Sucrose (%) | 2.42 | 2.88 |
| Maltose (%) | 5.85 | 5.85 |
| Higher sugars (%) | 0.80 | 0.83 |
| Unanalyzed (%) | 1.7 | 2.6 |
| pH | 3.83 | 3.84 |
| Free Acid (meq./kg.) | 15.18 | 22.55 |
| Lactone (meq./kg.) | 6.42 | 9.98 |
| Total Acidity (meq./kg.) | 21.60 | 32.53 |
| Lactone-Free Acid Ratio | 0.423 | 0.442 |
| Ash (%) | 0.059 | 0.158 |
| Nitrogen (%) | 0.026 | 0.032 |

The first step in the analysis of honey sugars is shown by Irene Kushnir, passing them through a charcoal column.—USDA photo by M. C. Audsley.

**Cotton Honey from Three States**

Cotton honey is characteristically rapidly-granulating and hence differs from many other honey types. In Table 2 is shown a comparison of the averages of two samples from Texas, four from Arizona, and three from California. These averages are remarkably similar. No striking differences in composition are apparent. The California average is slightly higher in sucrose, definitely of lower pH (higher active acidity), somewhat higher in lactone/acid ratio, and somewhat lower in ash. The Arizona average is definitely lower in nitrogen content, being but half of the other two. None of these differences should have any perceptible effect on the uses of the honey.

**Eastern and Western Orange Honey**

A third comparison of this sort is between California orange honey (three samples) and Florida orange (orange-

**Table 2. Average Composition of Cotton Honey from Different Areas**

| Color | Texas Dark half of White | Arizona Dark half of White | California Light half of White |
|---|---|---|---|
| Granulating tendency | Complete soft | Complete soft | Complete soft |
| Moisture (%) | 15.6 | 16.3 | 16.1 |
| Age at analysis (mo.) | 9 | 7 | 15 |
| Levulose (%) | 39.42 | 39.08 | 39.77 |
| Dextrose (%) | 37.21 | 37.35 | 36.18 |
| Sucrose (%) | 0.80 | 1.17 | 1.52 |
| Maltose (%) | 5.02 | 4.55 | 4.85 |
| Higher Sugars (%) | 0.42 | 0.57 | 0.46 |
| Undetermined | 1.5 | 1.2 | 0.9 |
| pH | 4.42 | 4.39 | 4.12 |
| Free acidity (meq./kg.) | 26.23 | 23.07 | 25.2 |
| Lactone (meq./kg.) | 5.08 | 3.85 | 7.09 |
| Total acidity (meq./kg.) | 31.31 | 26.92 | 32.38 |
| Lactone/Free acid | 0.194 | 0.166 | 0.280 |
| Ash (%) | 0.339 | 0.406 | 0.258 |
| Nitrogen (%) | 0.047 | 0.024 | 0.047 |

**Table 3. Average Composition of Orange Honey from Two Areas**

| Color | California Light half of White | Florida Dark half of White |
|---|---|---|
| Granulating tendency | ½" layer | ¼ of depth |
| Moisture (%) | 16.7 | 16.6 |
| Levulose (%) | 39.26 | 38.70 |
| Dextrose (%) | 31.83 | 31.82 |
| Sucrose (%) | 1.87 | 2.00 |
| Maltose (%) | 6.50 | 7.70 |
| Higher sugars (%) | 1.33 | 1.51 |
| Undetermined (%) | 2.5 | 1.3 |
| pH | 3.67 | 3.89 |
| Free acidity (meq./kg.) | 24.23 | 21.27 |
| Lactone (meq./kg.) | 13.12 | 7.28 |
| Total Acidity (meq./kg.) | 37.35 | 28.55 |
| Lactone/Free acid | 0.540 | 0.352 |
| Ash (%) | 0.082 | 0.067 |
| Nitrogen (%) | 0.030 | 0.009 |

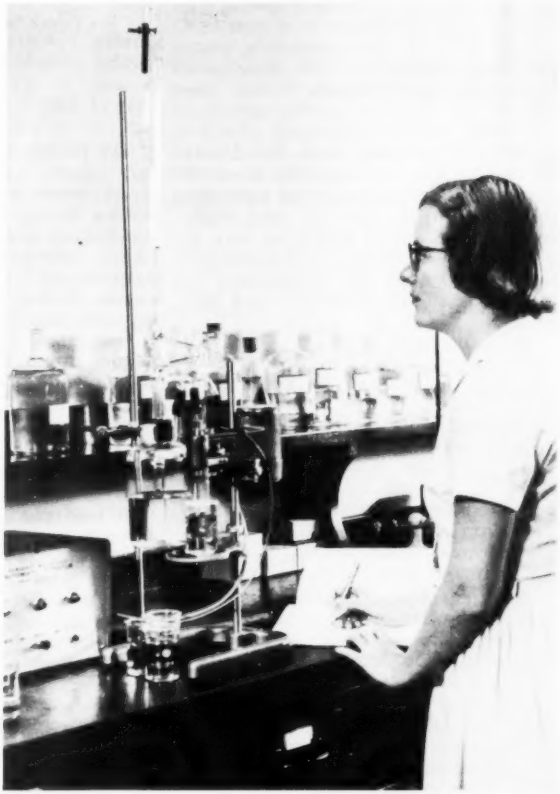
grapefruit, three samples) honey. The data are given in Table 3. These values are quite similar, with the California honey showing more acid, lactone and a higher lactone/acid ratio. The Florida average is unusually low in nitrogen. These last three differences are statistically significant. Otherwise, from an analytical point of view, there is very little or no difference between this type of honey, from Florida or California.

**Comparison of Pairs of Samples of Honey**

We may also compare individual samples of the same floral type from different areas. If this is done, considerable differences show up, reflecting the contributions of some of the factors mentioned earlier. In such a comparison of five pairs of samples, three had similar analyses, while two pairs showed considerable differences, particularly in dextrose and levulose and acidity.

In order, then, to find any general effects of location of production on the composition of honey, such comparisons should be made on considerable numbers of samples from each area, rather than single samples. When this is done with a limited number of samples we have seen that highland and valley alfalfa are quite similar in composition though differing in color and flavor; cotton honey from three states is quite similar; and orange honey from California is very similar in composition to that from Florida.

(Next month:-Relation of granulating tendency to composition.)



Many of the sugar analyses were done with the automatic titrator; Mary Subers records a value in the notebook.—USDA photo by M. C. Audsley.

# *More about* Argentine Rape Seed

**Because of the tremendous response from our readers concerning this honey plant we are happy to publish this article by a man who pioneered the growing of this seed over 20 years ago.**

**J. E. HASTINGS**
**Birch Hills, Sask., Canada**

RAPE, AS A honey plant, is suddenly coming into its own. To those of us, fortunate enough to have witnessed the popularity of this oil seed plant, expand from a very few acres here in Northern Saskatchewan, to the astounding 550,000 acres for the province in 1960, this sudden interest is not surprising.

My father and I grew one of the very first crops of this seed in the area some 20 years ago. Aside from an interruption of about six years, due to the lack of demand, plus having to haul the product some 275 miles to a processing plant, we have grown it ever since. Now we are able to deliver the seed to all country elevators, and being a cash crop, so sorely needed in a wheat glutted area, it has increased in acreage to major proportions.

My first experience with rape as a source of nectar goes back to our initial planting, already being a beekeeper struggling to produce my present strain of Mt. Caucasian bees.

This first test showed not only that rape was an outstanding producer of white honey, but the superiority of Mt. Caucasians as honey producers. One colony of these bees (a forerunner of my present stock), completely filled and capped 11 standard supers, (or brood chambers to friends in the south), besides having to draw five of these supers from foundation. The very best Italian colony in the yard failed to complete eight supers, the poorest Caucasian finished nine. After checking my own tests and those received from various areas throughout the country, a good strain of Caucasians will outproduce any race or hybrid where rape is grown. This is due to their longer hours of foraging, slow or non-swarming plus strength of flight.

### Rape as a Source of Nectar is Hard to Equal

It not only produces an abundance through cool or hot weather, but will do so for 24 hours a day while in bloom. This latter makes it ideal for the Caucasian bee, which is widely recognized for its ability to work in lower temperatures, allowing it to gather at least an hour earlier in the morning and again in the evening over Italians.

You can actually see the nectar in a rape blossom, a tiny droplet at the base of each of the four petals. Rape nectar is in such quantity and so easy to gather

that bees will often fly four miles from home, by-passing such sources as sweet clover, in order to obtain this delicacy. One of the main attractions to this nectar is the not too well known fact of its high sugar content. I have been given to understand the raw nectar contains 50 per cent sugar. This in turn, I'm sure, contributes to its main drawback, early granulation.

Rape honey granulates slowly in the comb, so long as the night time temperature remains relatively high. Should night temperatures drop to the point whereby the bees are unable to maintain hive temperatures in the upper honey supers, granulation increases rapidly to the point whereby it cannot be removed by the extractor.

The granulated rape honey is very fine, almost butter smooth in texture, but on occasion is so hard when complete as to resemble sugar candy.

Rape honey will grade No. 1 white. I would place its quality slightly below that of alfalfa and sweet clover. Sometimes when a container of this honey is newly opened it will give off an aroma, mildly offensive, which soon disappears.

**Two Main Types of Rape — Polish and Argentine**

First: Polish and its new selection, Arlo. Polish rape is possibly the species more commonly grown in the North due to its early maturing and its ability to withstand shattering of the seed pods to enable it to be "straight combined."

Polish, in a normal growing season, will be ready to harvest in 70 to 80 days from planting. Conditions being favorable it will commence to bloom in 30 days from planting. I've seen it showing scattered bloom at 22 days. Blooming period is about five or six days. Maximum yield would be 1600 pounds of seed per acre.

Argentine rape and later selections, Golden and Swedish will take from 105 to 110 days to mature. Blooming period may range from two to three weeks. These rapes should be swathed as soon as they are well "turned" in color of seed pod as they shatter very readily. Maximum yield may reach 2500 pounds per acre. I would strongly recommend the latter varieties for honey purposes, due to their longer flowering period.

Rape, either species, should be grown on good soil, free of weeds, preferably with good surface moisture. For Polish sow five to seven pounds per acre, Argentine eight to ten pounds. As the seed is small (round reddish to black in color) it should not be planted any deeper than necessary to be placed in moist soil, one to two and one-half inches in depth. Soil should be worked reasonably fine and a moderate packing of the field after sowing is desirable.

Rape responds well to commercial fertilizers where moisture is adequate.

The young plant, as can be expected, is very small, resembling a radish or turnip plant of similar age. Argentine plants resemble young cabbage plants so closely they are almost identical and cannot combat severe weed growth for some time as they seem to make very little growth progress in the early stages. Once they have established a good root system and commence to shoot up a flower stalk, they will combat moderate weed growth and will tolerate drier conditions without too much detrimental effect. Rape plants cannot come in contact with weed killer sprays, being highly susceptible.

**Rape Can Be Combined**

As before stated, rape is readily handled by modern combines providing a small holed grain sieve is used. A flax sieve works very well. Also wind adjustment of the combine should be closed off entirely. Small amounts of seed may be threshed by other methods. The pod shatters readily and the seed is easily separated from it. Seed testing 10½ per cent moisture is graded dry. Any seed containing a higher moisture content than this should, if stored in any quantity, be frequently examined for signs of heating. Any oil seed, such as rape and flax heat much more quickly than grains such as wheat, barley etc.

Here in the North we have several pests affecting rape, which are overcome by spraying with insecticides, mainly by aircraft. These pests are, Berth's Army worm, Diamond Back moth larvae, Beet Web worm and Turnip beetle. Infestations vary from year to year and may be severe this season and absent the next and vice versa.

(Continued on page 189)

# 1960 Crop Summary

**Honey Production** in 1960 totaled 260,128,000 pounds, five percent more than the 247,523,000 pounds produced in 1959, and nine percent more than the 1954-58 average production. The 1960 crop was the third largest in the 21 years of record, with production four percent less than the record 1952 crop, and two percent less than in 1958, the second largest crop. The increase in production from 1959 resulted from more production per colony since the number of colonies was practically the same, 5,430,000 in 1960 compared with 5,438,000 in 1959. Yield per colony averaged 47.9 pounds in 1960, compared with 45.5 pounds in 1959, and the 1954-58 average of 44.4 pounds. Beekeepers reported approximately 57 million pounds of honey on hand for sale in mid-December 1960, 22 percent of the production. A year earlier, stocks totaled 63 million pounds.

**Beeswax production** in 1960 totaled 4,728,000 pounds, up 7 percent from the 1959 production of 4,417,000 pounds, and eight percent above the 1954-58 average.

**Prices** - Beekeepers received an average of 17.8 cents per pound for honey sold during 1960, or five percent more than the 17.0 cents in 1959. All extracted honey in wholesale lots averaged 14.4 cents per pound compared with 13.7 cents in 1959. Extracted honey sold at wholesale in 60-pound containers averaged 13.0 cents per pound in 1960 compared with 12.5 cents in 1959. Beeswax prices to beekeepers averaged 43.9 cents per pound in 1960 compared with 44.3 cents in 1959.

************

The five percent increase in honey production from 1959 to 1960 resulted from increases of 21 percent in the Western region, 28 percent in the South Atlantic, 13 percent in the South Central, and 10 percent in the North Atlantic States. These increases were partially offset by a 13 percent decrease in production in the West North Central region and a seven percent decrease in the East North Central. A substantial part of the production change in each region resulted from yield changes,



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since changes in colony numbers were relatively small.

The 10 leading honey States, which produced 59 percent of the 1960 crop were California, Minnesota, Florida, Wisconsin, Texas, New York, Ohio, Michigan, Indiana, and Iowa. Although the order was different, these 10 States were the leading honey producing States in 1959, with 58 percent of the crop in that year. In California, yield per colony, although below average, was double the extremely low 1959 yield. In Minnesota, despite a late spring season and dry summer months which resulted in a lower yield per colony than in '59, production was the third highest of record. In Florida, yield per colony was up sharply from last year, pushing production to the highest of record. Colonies came through the winter in relatively poor condition in Wisconsin, but improved condition of nectar plants and ample working days limited the decline in yield per colony. In Texas, yield was the second highest of record, and in New York, the highest since 1945. In Ohio, Michigan, and Indiana, yields were down from 1959. However, with this exception, yields in these States were the highest in several years. In Iowa the season was unfavorable and yield was down sharply to the lowest level since 1954.

Beekeepers received an average of 17.8 cents per pound for all honey sold in 1960. This was five percent more than the 17.0 cents received in 1959. These estimates relate to all wholesale and retail sales of extracted, chunk, and comb honey from both large and small apiaries owned by farmers and non-farmers. Demand for good grades of honey was fairly active during most of the year and price increases were quite general. Extracted honey in wholesale lots, the most popular type of sale, brought an average of 14.4 cents per pound in 1960, compared wth 13.7 cents in 1959. Extracted honey in retail lots averaged 26.4 cents in 1960, compared with 25.1 cents for 1959 sales. Chunk honey in wholesale lots increased from 26.8 cents in 1959 to 28.0 cents in 1960, and in retail lots

(Continued on page 184)


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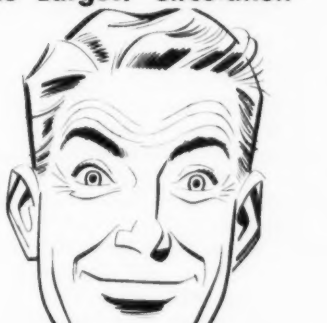
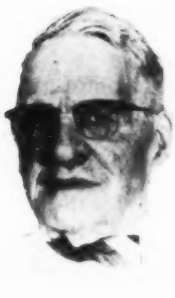


**Gleanings in Bee Culture**
**Medina, Ohio**

# Talks To Beekeepers



M. J. DEYELL

"He Who Knows Little Soon Repeats It"
— A Spanish Proverb

IF I AM NOT mistaken the above proverb applies to most of us, whether or not we admit it. The question is, what do we actually know about bees and beekeeping? We may as well admit that we don't know much.

Here in my office I am surrounded by beekeeping literature, bee journals and bee books. However, I do not find much time for reading, although I delve into some of the old bee books periodically. For some time I have been promising myself that I would read the entire book entitled, "Huber's Observations on Bees", translated by C. P. Dadant. I have read parts of it. Just yesterday I read parts of his first, second and third letters in which he relates his experiments on the fecundation of the queen bee. Huber, even though he was blind and saw through the eyes of his faithful servant, found that the mating of a virgin queen with a drone takes place outside of the hive, high up in the air, rather than within the hive. He also discovered that the virgin queens that have not been mated lay unfertile or drone eggs rather than fertile eggs.

Our readers who have not had an oportunity to read this book will be interested in the first part of the preface which reads as follows:

"In publishing my observations upon honeybees, I will not conceal the fact that it was not with my own eyes that I made them. Through a concourse of unfortunate accidents, I became blind in my early youth; but I loved sciences, I did not lose the taste for them when I lost the organs of sight. I caused the best works on physics and natural history to be read to me: I had for a reader a servant (Francis Burnens, born in the canton of Vaud), who became extraordinarily interested in all that he read to me: I judged readily, from his remarks upon our readings, and through the consequences which he knew how to draw, that he was comprehending them as well as I, and that he was born with the talents of an observer. This is not the first example of a man who, without education, without wealth, and in the most unfavorable circumstances, was called by nature alone to become a naturalist. I resolved to cultivate his talent and to use it some day for the observations which I planned: with this purpose, I caused him to reproduce at first some of the most simple experiments of physics; he executed these with much skill and intelligence; he then passed to more difficult combinations.

"I did not then possess many instruments, but he knew how to perfect them, to apply them to new uses, and, when it became necessary, he made, himself, the machines which we needed. In these divers occupations, the taste which he had for the sciences soon became a veritable passion, and I hesitated no longer to give him my entire confidence, feeling sure to see well when seeing through his eyes."

Most of us who have normal eyesight and other faculties may perhaps feel ashamed of ourselves for not having done more for the advancement of beekeeping in this day and generation.

A few days ago I was informed by our Gleanings' subscription department that our journal goes to readers in 68 countries of the world. That was somewhat of a surprise to me. A part of my work consists of answering or attempting to answer questions received from beekeepers in different parts of the world. I do enjoy this part of my work since I have the opportunity of learning more about how bees are kept in other countries.

Beekeepers in other countries may have hives and bees that are different from ours. They have problems that we do not have.

Obviously it would be impossible for me to outline a system of apiary management that would be suitable for beekeepers in the various countries. All I can do is emphasize the principles of beekeeping and suggest methods of management or hive manipulation for carrying out these principles or fundamentals in beekeeping.

**Objectives for 1961**

The goal of beekeeping should be to secure maximum per colony yields of surplus honey and wax. This goal can be attained if we give attention to the details of apiary management.

At the risk of being repetitious may I suggest at least four important requirements for securing the maximum crop of honey: (1) good bees, (2) good beekeeping equipment, (3) intelligent apiary management or hive manipulation, (4) having bees in a location or area where conditions are favorable for the production of honey. This applies particularly to the commercial beekeeper who depends on his bees for a livelihood. I shall elaborate on the requirements in future talks.

**Feeding Granulated Sugar**

Regardless of how well I think all colonies are supplied with stores in the fall, there usually are a few colonies that run low on food during the spring months. Some colonies seem to eat more than others. That is true with people. Some years ago I didn't have much faith in feeding granulated sugar. However, I have changed my mind during recent years. I spread the sugar on the inner cover with center block removed. This space will hold at least three pounds of sugar. This puts the sugar directly above the cluster of bees

Bob Stauble, Techny, Illinois, examining a colony that had been fed granulated sugar on the inner cover with center block removed. Notice the bees on the sugar, even though there is snow on the ground.

where they can get to it quite easily. If feeding is done after mild weather arrives the bees are likely to take the sugar. Bees need water to mix with sugar to make it available as food. During cold weather there is usually some moisture that accumulates in the hive on top of the inner cover when the block covering the hole in the inner cover is removed.

If bees need a considerable amount of food to supplement honey that is lacking for stores, by all means feed combs of honey or sugar syrup but for emergency feeding granulated sugar can be fed to good advantage.

**Having Some Supers at Outyards in the Spring**

I have learned from experience that it pays to have some supers at each outyard, early in the spring, at least enough to go once around. My yards are some little distance from the main road and in early spring it is sometimes impossible to drive into the yards dur-

(Continued on page 187)

# Honey For Easter

**A. C. ULLRICH**
**McHenry, Illinois**

THE EASTER SEASON is an annual church celebration commemorating the Resurrection of Jesus Christ.

Its special interest to beekeepers lies in the fact that a portion of Christ's first meal after He appeared was honey.

The story is repeated for those who might have missed an earlier narration of it.

When Jesus Christ first appeared among His friends after His Resurrection He apparently was hungry, for His first words were "**Have ye here any meat**?" With wondering and happy hearts they gave of what they had; "**A piece of a broiled fish and of an honey comb**". **A piece of a broiled fish** meant that a fisher friend provided it. Likewise **Of an honey comb** meant, we can assume, that the honey was provided by a beekeeper friend. (Yes there were beekeepers in Christ's time.)

Thus it seems from the foregoing that "Honey for Easter" with its Biblical background has special significance and surely a rightful place in the minds of Christian beekeepers.. A meaningful desire to perpetuate that honey-giving service at Easter Time seems prevalent everywhere.

It has been suggested that beekeepers diversify the distribution of their honey gifts to include shut-ins and Rest Homes as well as the Christian Churches of the community.

When you call to explain the visit, leave a generous gift of honey for their Easter morning breakfast. It will be doubly appreciated, knowing its purpose and borne by a true beekeeper.

To each of you who thus journey I promise an unforgettable day. The combination of friendly calls, kindly gifts with their messages will be climaxed by the humble knowledge that you will be walking in the footsteps of an earlier beekeeper who served Christ on His Risen day.

Knowing the deep humility, dedicated beekeepers attach to their ancient calling, I respect and appreciate your company wherever you are as we jointly visit these worthy people.

**P.S. To the many who wish color reprints of the Original Mosaic Rendering shown, I quote the following prices to cover preparation costs. Color Prints, $1.00 — 35 MM Color Slides, $1.00. For sepia enlargements, quotation is made by return mail following receipt of size required. — A. C. U.**

# NEWS and EVENTS

## PENNSYLVANIA
### Beekeepers' Association Meeting

The annual meeting of the Pennsylvania Beekeepers' Association was held on January 10 at Harrisburg in connection with the Farm Show. The excellent display of honey in various classes and types occupied its usual prominent position at the entrance of the building.

The individual booths were attractively done and they, too, were in a location where a great number of the large crowds attending the show would see them. The displays stressed the value of honey as a food, and the fine pollination job performed by bees.

As a special added attraction this year, the Association sponsored a very attractive and elaborate professionally-made display located at the main entrance of the Show. The display was the lighted, rotating type. The Association is to be congratulated on its fine efforts to promote honey and beekeeping among the farm folk as well as many suburban and city dwellers of their state.

Dr. Norman Gary of Cornell University judged the honey classes and was to be the principal speaker, but illness of a member of his family forced him to leave early, and thus the meeting was unable to hear his speeches.

Appearing on the one-day program were Mr. W. H. Henning, Secretary of Agriculture; President Harry Merrill of Muncy; Secretary Robert Crimbring of Canton; Chief Inspector George Sleesman of Harrisburg; Bill Clarke, Extension Specialist from Penn State; Prof. E. J. Anderson of Penn State; and John Buchanan of Medina, Ohio.

Paul Cummins was in charge of the booth selling honey products at the show, a service which he has been performing since the booth was opened a number of years ago.

Miss Freyna Lois Schmidt, the Pennsylvania Honey Queen assisted at the honey booth. She also appeared on radio and TV during the week of the Farm Show.

The banquet climaxed the day's activities. Ralph Gamber of Lancaster presided at this affair which was held in the new Colonial Park Evangelical and Reformed Church.

Officers for 1961 are as follows: President, Harry Merrill of Muncy; Vice-President, Paul Cummins of Conshohocken; Secretary-Treasurer, Robert Crimbring of Canton.

## KANSAS
### Crawford County Beekeepers' Assn.
### Cherokee, Kansas
### March 18, 1961

The Crawford County Beekeepers will meet March 18, 2:00 p.m. at the Snare honey house, Cherokee, Kansas, located on the north side of Highway U.S. 160, one mile east of Highway K 7. We are expecting Mr. Magers of Kansas City to show colored slides of honey plants. Refreshments will be served. We would like to invite anyone who is interested to attend.—Mrs. R. S. Snare, Sec.-Treas.

## MISSOURI
### Midwestern Beekeepers' Association
### Kansas City, Missouri
### March 12, 1961

The Midwestern Beekeepers' Association will hold its regular monthly meeting at the I.O.O.F. Hall, 812 Westport Road, Kansas City, Missouri, 2:30 P.M., Sunday March 12, 1961. There will be a speaker and discussion on

Honey Plants, and Spring Preparation in the bee yard. Refreshments will be served. Everyone welcome.—James A. Worrel, Sec.

### MASSACHUSETTS
**Worcester County Beekeepers' Assn.**
**Worcester, Massachusetts**
**March 18, 1961**

The March meeting of the Worcester County Beekeepers' Association will be held at the Worcester County Extension Service, 36 Harvard Street, Worcester, Massachusetts on March 18, 1961. The meeting will begin at 6:30 P.M. with a potluck supper. Mr. and Mrs. David Henderson will show slides of their trip to Bermuda.—Glenn T. McLain, Jr.

### NEW HAMPSHIRE
**Beekeepers' Association**
**Westmoreland, N. H.**
**March 11, 1961**

New Hampshire Beekeepers' Association will hold the second of two special meetings for beginners, March 11, at the Town Hall in Westmoreland, N. H. Mr. Paine will be in charge of program. Subject will be "Package Bees and Proper Equipment". — Barbara Prior, Sec.

### ANNUAL COURSE IN BEEKEEPING

Sponsored by the Worcester County Beekeepers' Association and the Worcester Natural History Museums
Held at Rice House Annex, Childrens' Museum, 41 Elm St., Worcester, Mass.
Each class is held on Thursday evening at 8:00 P.M.

March
- 2nd Mr. B. W. Richardson, Worcester, Massachusetts. General introduction to beekeeping, elementary terms, and equipment necessary.
- 9th Mr. Philip Pike, Worcester, Massachusetts. Honey plants in sequence, spring to fall, slides.
- 16th Mr. Wallace Parker, West Boylston, Massachusetts. Slides, showing different colony combinations. Caucasian versus Italian bees.
- 23rd Mr. Aylmer J. Jones, Malden, Massachusetts. Honey producing and processing.
- 30th Mr. Fred Blaine, Indian Orchard, Massachusetts, Inspector. Spring management, colonies for pollination.

April
- 6th Asa Olsen, Concord, Massachusetts. Single brood nest and wintering same.
- 13th Mr. Robert Havener, Westminster, Massachusetts. One and one-half colonies.

This course is free to all who are interested.—Glenn T. McLain, Jr.

### MASSACHUSETTS
**Middlesex County Beekeepers' Assn.**
**Waltham, Massachusetts**
**March 25, 1961**

March is the busy month for Middlesex Beekeepers. At the spring Flower Show sponsored by the Massachusetts Horticultural Society at Wonderland in Revere, Massachusetts, the club will have an educational exhibit with several observation hives and members present to answer questions. The Flower Show will be held March 11-19, 10 a.m. to 10 p.m.

Our monthly meeting will be held on March 25 at 6:30 p.m. with a pot-luck supper followed by a meeting which will include a talk on "Bee Diseases" by Henry Neunzer and a question and answer period for beginners.—B. Carlson, Corres. Sec.

### HONEY PRODUCTION IN CANADA FOR 1960

The honey report put out by the Dominion Bureau of Statistics, Ottawa, Canada, as of January 20, 1961, estimates the honey crop in 1960 as 32.2 million pounds, two per cent above the 1959 crop and 12 per cent above the 1949 to 1958 average. The average yield per colony in 1960 was 99 pounds compared with 95 pounds in 1959. Due to favorable weather conditions the honey crop in the western provinces was considerably above that in the eastern provinces. It is interesting to note that the slightly larger crop in 1960 was produced by fewer colonies of bees.

### MASSACHUSETTS
**Bristol County Beekeepers' Association**
**Segreganset, Massachusetts**
**March 15, 1961**

The Bristol County Beekeepers' Association extends an invitation to interested beekeepers in all the surrounding counties in Massachusetts who would like to hear a discourse given by one of our Massachusetts Federation of Beekeepers' Association delegates, Mr. Justin H. Caswell. His discourse will be on "Pollination". As Mr. Caswell is an expert on this feature of beekeeping, having had years of experience both in his own state of Massachusetts as well as in the state of Maine, you will, no doubt, want to hear how he

does it; and, what has made him so successful at it.

"Planned pollination of legume flowers as well as berry plants is as essential to the production of a good seed crop as land preparation and favorable weather. Planned pollination means arranging to have enough insects at hand to get a maximum set of seed when the crop will be in bloom." It pays both ways. The farmer gets a large seed production and the beekeeper gets the honey and the money, as well.

Please try to be in your seats at about 7:45 p.m. on Wednesday night, March 15, 1961 at the Bristol County Agricultural High School in Segreganset, Masachusetts as our free beekeeping school gets started promptly. As an added feature there will be two movie films in sound and color on "Bees for Hire" and "The Pollination of Alfalfa".

We will have honey cakes for you all as well as hot coffee served at the refreshment hour by Mrs. Vivian Caswell. — Mary V. Maslanka, Corres. Secretary.

**KANSAS**
**Northeastern Kansas Beekeepers' Assn.**
**Kansas City, Kansas**
**April 2, 1961**

The Northeastern Kansas Beekeepers' Association invites all members and others interested to attend its meeting being held Sunday, April 2nd, 2:30 p.m. in the I.O.O.F. Hall, 2107 Silver Ave., Kansas City, Kansas.

A practical demonstration of assembly of beekeeping equipment will be given. Time will then be devoted to general discussion. If you have individual short cuts or gadgets, bring and show them.

Our organization feels greatly honored to have had the first appearance of the newly crowned "American Honey Queen" and her escort at our February 5th meeting. Included also in attendance were a representative of Oregon, one from the Superior Honey Co. of California, and the State Apiarist of Tennessee.—R. F. Ferguson.

**KANSAS**
**Northeastern Kansas Beekeepers' Assn.**
**Kansas City, Kansas**
**March 5, 1961**

The Northeastern Kansas Beekeepers' Association welcomes ALL of its members and any persons interested in Bee Culture to attend the meeting to be held Sunday, March 5th, 2:30 a.m. in the I.O.O.F. Hall, 2107 Silver Ave., (Argentine District) Kansas City, Kansas. Mr. Carl Kalthoff, commercial beekeeper of Lexington, Missouri, will speak on the subject of "Spring Management". Questions will be in order after the speaker has finished. A motion picture, "The Realm of the Honeybee", will be a feature of the day also.

Come! — Join! and help us achieve "OUR GOAL" and we shall be more than happy to help you reach yours. —R. F. Ferguson, Ass'n. Editor.

**CORRECTION**

An error occurred on page 117 of the February Gleanings in the item on Georgia. Utah does not have the Check-off payment plan for promotion of honey.

# Obituary

## Frank Zupancic

ON THURSDAY January 19, Mr. Frank Zupancic of Joliet, Illinois died. Mr. Zupancic, born in Yugoslavia and a well known beekeeper for the past 35 years, operated 600 colonies in the vicinity of Joliet. He was a devoted member of the Will, Grundy, Kendall Beekeepers' Association, also a member of the Illinois State Beekeepers' Association. He is survived by his wife Stella, two sons and two daughters. The family will carry on the work as Frank would wish.—Ralph O. Klebes, Sec. Will, Grundy, Kendall Beekeepers' Association.

# Buy and Sell

Classified rates: 18¢ per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it) count as one word. Copy should be in by the 10th of the month, preceding publication.

## HONEY FOR SALE

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. HUBBARD APIARIES, ONSTED, MICHIGAN.

IOWA HONEY, one can or truck loads. RUSSELL D. SMALLEY, BEAVER, IOWA.

CLOVER extracted honey in sixties. ABRAM BRUBAKER, 1525 September Dr., LANCASTER, PA.

TUPELO, wild flower, alfalfa, or orange, in 60's. LANCASTER COUNTY DUTCH GOLD APIARIES, 910 State St., LANCASTER, PA.

HONEY—In any size container, also Mail Order Dealer for Bee Supplies. Write for prices. L. E. ALLEN, TIPTON, MICH.

LIGHT CLOVER, new 60's. Few cans buckwheat. LA VERNE DEPEW, AUBURN, N. Y.

FOR SALE—965 new 60-pound cans of white clover honey. Honey must be sold in one lot. DUANE JOHNSTON, BAD AXE, MICH.

## HONEY AND WAX WANTED

**BEEKEEPERS TAKE NOTICE—We cannot guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C.O.D. terms except where the buyer has thoroughly established his credit with the seller.**

WANTED—All grades of extracted honey. Send sample and price. DEER CREEK HONEY FARMS, LONDON, OHIO.

CASH FOR BEESWAX. Write as to quantity and we will quote price. MUENCH-KREUZER CANDLE CO., INC., SYRACUSE, N. Y.

WANTED—White extracted or comb honey. Send sample. MILLERSPORT HONEY CO., MILLERSPORT, OHIO.

BEESWAX WANTED—Highest prices paid in cash or trade for bee supplies. THE A. I. ROOT CO., MEDINA, OHIO; COUNCIL BLUFFS, IOWA; SAN ANTONIO, TEXAS.

WANTED—Light amber clover, fall flowers, buckwheat and white clover. Send sample and lowest price. CLOVERDALE HONEY CO., FREDONIA, N. Y.

WRITE FOR SHIPPING TAGS and quotations on rendered beeswax. We buy from one pound up and if you have over 25 pounds let us work it into foundation for you at a 25 per cent saving. WALTER T. KELLEY CO., CLARKSON, KY.

WANTED—Buckwheat and light amber honey. EASTERN FOOD PRODUCTS, 421 Bedford Ave., BROOKLYN, N. Y.

HONEY WANTED for bottling, all types in drums, tins, trailer and car lots. Send samples each lot. Write: CHAS. E. FARRIS CO., 99 Hudson St., NEW YORK CITY. Est. since 1910.

WANTED—Honey in 60 pound cans, also beeswax any quantity. L. E. ALLEN, TIPTON, MICHIGAN.

ALL GRADES extracted honey wanted in both 60 pound cans and 600 pound drums. PRAIRIE VIEW HONEY CO., 12303 12th St., DETROIT 6, MICHIGAN.

WANTED, chunk comb and extracted honey. Mail sample and price. STOLLER HONEY FARMS, LATTY, OHIO.

WE RENDER cappings, old combs and buy your beeswax. Shipping tags sent on request. M. R. CARY CORP., GPO Box 818, SYRACUSE 1, NEW YORK.

WANTED — Chunk and extracted honey. Send sample and price. RONALD CULP, CIRCLEVILLE, OHIO.

WANTED—Honey and Beeswax. WALLY'S BEE ENTERPRISE, 4900 Morningside, SIOUX CITY, IOWA.

## BEE SUPPLIES FOR SALE

WRITE FOR CATALOG—Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. HUBBARD APIARIES, Manufacturers of Beekeepers' Supplies and Comb Foundation, ONSTED, MICHIGAN.

THE BIGGEST Bee Supply Catalog published (64 pages) free for the asking. Listing many items not found in other catalogs. No agents—buy direct and save 20%. WALTER T. KELLEY CO., CLARKSON, KENTUCKY.

QUEENBEE PAINTING OUTFITS, $1.50. INTERLOOKERS, $3.00 postpaid. SOUTHWICK APIARIES, WABAN, MASS.

FREE CATALOG—Cypress bee hives and bee supplies. Save up to 40% on hives that last. MYERS CRAFT MANUFACTURING CO., BURGAW, NORTH CAROLINA.

No. 1 Hive Bodies, $2.00; No. 2 Hive Bodies, $1.75; Covers and Bottom boards, $1.10; Shallow Extracting Supers, $1.25; Hoffman Full Depth Frames (per hundred), $11.00. Catalog on request. HAGEN-LUNCEFORD MFG. & SUPPLY CO., 2500 N. 4th Street, COEUR D'ALENE, IDAHO.

BEFORE YOU SELL your honey or buy your honey containers see HUBBARD APIARIES, ONSTED, MICHIGAN.

Our beginner's book "HOW TO KEEP BEES AND SELL HONEY", 75¢ postpaid is what you need. Over 100 pages and 175 pictures make beekeeping easy and profitable from the start. WALTER T. KELLEY CO., CLARKSON, KY.

FIND OUT ABOUT the new SEE-BEE Hive. Let bees put honey in glass jars. Take jars from hive without smoke or veil. Children can do work. Write for information on this patented and proven method. Protected territories available to dealers. SEE-BEE MFG. CO., GALAX, VA.

IF YOU HAVE NOT received our free 1951 complete Bee Supply Catalog at manufacturer's prices write HUBBARD APIARIES, ONSTED, MICHIGAN.

700 8-FRAME, all wire excluders, wood rim at less than cost. HUBBARD APIARIES, ONSTED, MICHIGAN.

## USED EQUIPMENT FOR SALE

FOR SALE—20 Killion comb honey supers, $1.35 each. No disease. H. H. RICKLY, Rt. 2, BLUFFTON, OHIO.

LOT OF 10-frame, used bee equipment, deep supers, tops, bottoms, queen excluders. Excellent condition, painted, priced reasonable. C. HECKMANN, 405 Kingshighway, ST. CHARLES, MO.

100 COMPLETE hives and extractor. Only two years old. ARTHUR H. STOKES. McVILLE, NORTH DAKOTA.

COMB FOUNDATION Mill. Cheap. PULLIN'S APIARIES LTD., ONEHUNGA, NEW ZEALAND.

100 GOOD USED tops and Bottoms, also hive bodies. RALPH MAGERS, AUGUSTA, KANSAS.

AUCTION SALE, March 18, 1961. — 110 colonies, 2½ stories; complete honey house, movable; 380 9½-deep hive bodies; 200 shallow supers; 375 comb supers; 185 bottom boards; 175 metal and wood covers. Write for sale bill. MARSHALL WHITCOMB, ROCKFORD, MINN.

## FOR SALE

FOR SALE—Complete, modern, up-to date, fully equipped bee business. 700 colonies. 40 by 80 two story honey house. Three bedroom modern home. Retiring. J. D. HARRAH, CHARLO, MONT.

200,00 POUNDS damaged cane and beet sugar, 5¢ per pound. HONEY BOY, 2824 So. Belt, ST. JOSEPH, MO.

SUGAR—Best quality cane, double saving to beekeepers. McClain, 12491 Lacey, HANFORD, CALIFORNIA.

APIARIES—For Sale or lease. Write LESTER EDWARDS, PIPER CITY, ILL.

## BEES AND QUEENS FOR SALE

**WE USE ALL POSSIBLE CARE in accepting advertisements but we cannot be held responsible in case disease occurs among bees sold or if dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.**

FOR SALE - - - - - HALF OUR BEES. 3,000 one story 10-frame colonies. No AFB. Good condition - honey for winter - FOB central California. $6.50 each in lots of 500 or more. ART HARRISON, Box 602, LOS BANOS, CALIFORNIA.

CARNIOLAN and CAUCASIAN BEES for 1961. Booking queens, each $1.25, clipped and marked. 2 pound package with queen, $4.00. 3 pound package with queen, $5.00. LEWIS & TILLERY BEE CO., R. 3, Box 261, Phone DU 2-8371, GREENVILLE, ALABAMA.

QUALITY ITALIAN QUEEN BEES—Until June 1st, each $1.35, 5 or more $1.30 each, 25 or more $1.25 each. Reduced prices after June 1st. Write for package bee prices. A. G. WOODMAN CO., GRAND RAPIDS, MICH. or LENA, S. C.


**HONEY LABELS**
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
**C. W. AEPPLER COMPANY**
Oconomowoc, Wisconsin

**"SWARMING STOPPED COLD"**
**95% Foolproof**
No Gimmicks
No Gadgets
No Tricks
Bigger Crops - Better Beekeeping
Full Directions Price $1.00
**BAKER'S APIARIES**
Glencoe Illinois

**J. E. WING & SONS**
49 Years Continuous Service
Italian Package Bees
and Queens
Our Specialty
**Knights Landing, Calif.**

**CONNEAUT**
The SIXTY for the SIXTIES
BEST ON MARKET
Ask
Your Jobber
or Write
**THE CONNEAUT CAN CO.**
**Conneaut, Ohio**

**HONEY WANTED**
Carloads and less than carloads. Mail sample and best prices in all grades.
**W. F. STRAUB & CO.**
5520 Northwest Highway Chicago 30, Ill.

ITALIAN and CARNIOLAN bees, 3 lb., $5.00; 5 lb., $7.00; Queens, $1.30. LUTHER PICKETT, EFLAND, N. C.

BOOSTER BEES, 75 cents pound, in your cages after May 15th. Can supply new cages and queens. A. V. DOWLING, North St., VALDOSTA, GA.

APPROXIMATELY 100 two story colonies bees, ¾ depth hives, no locations. Available mid-spring with state inspection at Trumansburg, N. Y. ROGER C. LANE, 1033 Oak St., DUNEDIN, FLA.

ITALIAN QUEENS, $1.50; STARLINE, $2.00. Write for quantity prices. April 1st, June 1st. No packages. S. J. HEAD, CROSETT, ARK.

50 – two story colonies Italian bees, all in good condition. No disease. E. G. KYTE, FAIRVIEW, PA.

ITALIAN QUEENS, $1.40 each, 51 up. $1.25. NEUSE APIARIES, KINGSBURY, TEXAS.

1,000 COLONIES, 10-frame, 3 or 4 stories, 2,000 8-frame, 2 or 3 stories. Also for LEASE, 3,000 colonies, either 8 or 10 frame. Bees and equipment, excellent condition. JIM'S VALLEY APIARIES, P. O. Box 544, SUNNYSIDE, WASHINGTON.

SELLING 150 colonies bees. Extra equipment. MAYHEW HONEY FARMS, CLARKSON, KY.

## ROYAL JELLY

ROYAL JELLY–$8.00 per ounce, postpaid. Write for prices in large lots. THE STOVER APIARIES, MAYHEW, MISS.

SUPER STRENGTH 100 mg. Royal Jelly capsules in bottles of 100 for $10.00. PRAIRIE VIEW HONEY CO., 12303 Twelfth St., DETROIT 6, MICHIGAN.

FOR SALE–Pure Royal Jelly, ½ oz., $5.00, 1 oz., $8.00, 1 lb., $90.00. M. D. SAWYER, 206 Pershing Hwy., BUNKIE, LA.

## HELP WANTED

WANTED–One or two men willing to work bees on shares or wages. HUBBARD APIARIES, ONSTED, MICHIGAN.

WANTED–Experienced helper for season. Write stating age, experience, reference, wages expected etc. SODER APIARIES, STRATFORD, IOWA.

HELP WANTED–Full efficiency. $350.00 to $450.00 per month. Box 28, GLEANINGS, MEDINA, OHIO.

EXPERIENCED man for bees or queens in Louisiana and honey production North. HOPKINS HONEY FARMS, MARINGOUIN, LA.

EXPERIENCED beekeeper for honey production in South Dakota. Good wages. Write JIM REED, 429 Olive, TAFT, CALIFORNIA.

## MISCELLANEOUS

BEES REMOVED from house or tree or hive without touching either house or bees. Bees will then move honey into hive. Save property, honey, and bees with my method. Send $2.00 for details. Satisfaction guaranteed. GEORGE HAWKINS, Rt. 1, LAWSON, MO.

RENDERING every day in our all new plant. All honey saved from cappings. Rendering slumgum and old combs. Write for free shipping tags and rates. HUBBARD APIARIES, ONSTED, MICHIGAN.

WE BUILD HIVE LOADERS, or furnish plans, motors, power units, parts. GARTRELL'S, 6001 Muldrow Road, CARMICHAEL, CALIF.

FREE SERVICE–Wanted & For Sale Board. Send list of your Wanted and For Sale items–Bees, Extractor, Knives and other beekeeping items. Each visit at Hubbard's check board for Bargains. HUBBARD APIARIES, ONSTED, MICHIGAN.

$1.00 GETS 100 PRINTED return address 6¾ white envelopes. Free printing samples. QUALITY CRAFTS, Box 7142, NASHVILLE 10, TENNESSEE.

## WANTED

LARGE BEE SUPPLY Manufacturer and Honey Processor wants Supply Dealers and Honey Buyers. Write for Catalog and Honey Prices. HUBBARD APIARIES, ONSTED, MICH.

WANTED small and large lots of bees and equipment, including extractors. HUBBARD APIARIES, ONSTED, MICH.

BOOKS–ON BEES and Beekeeping wanted. Any language, old or new, send title and price. MEL-GLAD. C.P. 1431. QUEBEC, CAN.

WANTED–200 supers feed honey in standard wired brood frames for spring feed. DAKOTA HONEY, DICKINSON, N. D.

TO BUY or lease large apiary in Dakotas or Montana. JIM PERKINS, 210 W. Cypress, VISALIA, CALIF.

## POSITION WANTED

BEEMAN WANTS POSITION somewhere in California. 25 years with bees. DOMINICK PORPIGLIA, Ontario Road, IRVING, N. Y.

YOUNG CANADIAN BEEKEEPER wants to further experience with commercial operator in California on a salary basis. Write JIM RIDEOUT, R.R. 2, NORTHFIELD, ONT., CAN.

MAN WANTS WORK in Apiculture Some experience, studious, capable. OTTO BIVINS, R.R. 5, SULLIVAN, INDIANA.

## SEEDS

HONEY PLANTS–Ask for illustrated 1961 catalog. Vitex negundo, long blooming nectar shrub, 4 plants, $2.50; seed, one packet each –five unusual honey plants, $1.00; postpaid. PELLETT GARDENS, ATLANTIC, IOWA.

200 POUNDS of Argentina rape seed. Write for price. HUBBARD APIARIES, ONSTED, MICHIGAN.

100 THORNLESS honey locust seeds, $1.00. EDWIN HUNECKE, FRONTENAC, MINN.

## MAGAZINES

PROFIT AND HEALTH–Raise dairy goats. Learn how. Monthly magazine, $2 yearly; sample and information 25¢. DAIRY GOAT JOURNAL, COLUMBIA T3, MISSOURI.

THE SCOTTISH BEEKEEPER (The official organ of the Scottish Beekeepers' Association.) Scottish in character, international in appeal. Annual subscription $2 post free. Sample copy from ROBERT N. H. SKILLING, F.S.C.T., 87 King St., KILMARNOCK, AYSHIRE.

INDIAN BEE JOURNAL, know interesting facts concerning the honeybees of India. The only Bee Journal of India published in English. Subscription Rs. 12/- or Sh. 17/6d (Sterling) or $2.75 per year (INTERNATIONAL M.O.). Sample copy 2s. or 25 cents. Can be had from The Managing Editor, Indian Bee Journal, Naini Tal, U.P., India.

ARCHIV FUR BIENENKUNDE, International journal for Bee Culture and beekeeping economics. Founded in the fall of 1918. Oldest scientific bee journal in the world. Praised again and again for its decades of independent leadership through many endorsements and advice as a valuable source also for the practice. Yearly DM 5.50. Any aspiring beekeeping friend will receive a sample copy. BIENE-VERLAG, GIEBELBACHSTR, 19, LINDAU (B) GERMANY.

BEE WORLD, the international journal of the Bee Research Association published monthly, contains the latest research reports on bees and beekeeping, and also Apicultural Abstracts. Bee World is $9.00 a year to non-members. but the B.R.A. membership subscription of $7.00 includes Bee World. B.R.A. members in America are served by the B.R.A. American Committee, and have their own Branch Library at O.A.C. Details free (or with specimen Bee World and new B.R.A. Handbook, 50 cents) from Apiculture Department, Ontario Agricultural College, Guelph, Ontario, Canada.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription, $3.00. Box 189, SAN ANGELO, TEXAS.

## TOO LATE TO CLASSIFY

ATTRACTIVE Day Glow Honey Sign – Eat More Honey, Feel Better, Live Longer. 50¢ plus postage. FRED RUSSELL, CHELMSFORD, MASS.

Remove your honey the easy way. Use THE FASKE BEE ROBBER – a combination queen excluder and bee escape. Eliminates disturbance and need for acid or gas. Just turn handles and within 24 hours remove your honey. Money back guaranteed. Price $2.75, Shipping Weight 5 lbs. A. W. FASKE, Borden, Indiana.

**Beeswax Rendering Service**
Exchange Your Beeswax
for Foundation
Write for Price List.
**WAX WORKERS, INC.**
1330 Slaterville Rd. Ithaca, N. Y.

**GRAY CAUCASIANS**
Quality
**BEES and QUEENS**
Dependable Service
Write for Prices
**Bolling Bee Co.**
Greenville, Ala.

# QUEENS
## Carniolan and Caucasian

Looking forward to 1961 season. Am offering same high producing queen bred for early build-up, gentleness, high production qualities of several years breeding. Prepared to operate 1500 nuclei to meet the increased demand.

**Queens, $1.45 each Air Mail**
Quantity Discount.

**W. D. REAMS**
Box 458 La Belle, Fla.

**HOLLOPETER'S**
Hardy Northern Italian Queens
June-November. Our 50th year
**WHITE PINE BEE FARMS**
Rockton, Pa.

**WILLIAMS ITALIAN QUEENS**
Unsurpassed By Any Stock
Certificate with each shipment
1-9 Air Mail ..... $1.25 each
10-99 Air Mail ..... 1.15 each
100 Up Air Mail ..... 1.05 each
Clipped and Marked 10¢ each.
**DR. WILLIAMS APIARIES**
115 W. Sterling Ave. Baytown, Texas

**CALIF. CAUCASIAN QUEENS**
1 to 24, $1.50 25 to 99, $1.35
100 up, $1.25
**DON J. STRACHAN**
Rt. 2, Box 325 Phone Sh 2-3881
YUBA CITY, CALIF.

**TEXAS CAUCASIAN QUEENS AND PACKAGES**

| BOOKING ORDERS FOR 1961 | 1-24 | 25-99 | 100 up |
|---|---|---|---|
| 2 lb. pkg. w/q | $4.50 | $4.25 | $4.00 |
| 3 lb. pkg. w/q | 5.60 | 5.30 | 5.00 |
| Queens | 1.45 | 1.35 | 1.25 |

All queens personally produced by J. E. Hastings and his breeding stock bred for non swarming, very gentle, good honey producers.
10% books your order, balance two weeks prior to shipping. Health certificate, weight and live arrival guaranteed. Five cents extra for marking or clipping.
**KANES APIARIES**
Rt. 1, Ph: SW 8-3039 Hallettsville, Texas

ITALIAN BEES and QUEENS

NOW is the time to book your orders for spring and summer delivery. Book them with me and be sure of getting pure bright 3-band ITALIAN BEES AND QUEENS. Full weight packages, prompt service, and safe arrival guaranteed. State health certificate furnished.

| | |
|---|---|
| Untested Queens | $1.00 |
| Tested Queens | 1.75 |
| 2 lb. pkgs. w/q | 3.75 |
| 3 lb. pkgs. w/q | 4.75 |
| 4 lb. pkgs. w/q | 5.75 |

10% down books your order.
Balance 10 days before shipment.

**JOHN A. NORMAN**
Route One Grady, Ala.

**QUEENS**

| Italians | Caucasians |
|---|---|
| 1-24 | $1.25 |
| 25-100 | 1.10 |
| 3-lb. pkgs. w/q, each | 5.25 |

Book your order today.
No deposit required.
Ready April 1st.
Satisfaction guaranteed.

**MOREHEAD & SONS**
Funston, Ga.

**HOLDER APIARIES**
Leroy, Alabama
Phone: CHestnut 6-2769
In the mild climate of the deep south.
Plenty of
Italian Queens & Package Bees
Ready for shipment April 1st.

| | Queens | 2 lb. pkg. w/q | 3-lb. pkg. w/q |
|---|---|---|---|
| 1 to 24 | $1.30 | $4.50 | $5.50 |
| 25 to 100 | 1.15 | 4.25 | 5.25 |

Please give our 37 years of experience a trial.
Large enough to accomodate, small enough to appreciate.


## 1960 CROP SUMMARY

(Continued from page 173)

from 33.6 in 1959 to 35.2 cents in 1960. Comb honey in wholesale lots averaged 33.7 cents, and in retail lots 38.6 cents per pound in 1960, compared with 32.9 and 36.6 cents per pound, respectively, in 1959. Beeswax prices generally were little changed from the previous year and averaged 43.9 cents per pound in 1960, compared with 44.3 in 1959.

Taken from the United States Department of Agriculture, Agricultural Marketing Service, and Crop Reporting Board, Washington, D. C.


**HARPER'S**
**FAMOUS HIGH QUALITY**
**ITALIAN QUEENS & BEES**

| | 2-lb. w/q | 3-lb. w/q | QUEENS |
|---|---|---|---|
| 1-29 | $4.35 | $5.25 | $1.35 |
| 30 & Up | 4.10 | 5.00 | 1.20 |

Queens sent Prepaid Air Mail. Packages Express Collect or Parcel Post when prepaid by customer. Health certificate and live arrival guaranteed.
Please let us have your order early and help us to give you your desired shipping dates. Thanks!

**CARLUS T. HARPER**
New Brockton, Ala.

Booking orders now.
Over 35 years a shipper.
Send for FREE Circulars.

**BLUE BONNET APIARIES also HOME of AULT BEE FARMS**
Weslaco, Texas

**ITALIAN**
Package Bees
and
Queens
**JOHN S. SHACKELFORD**
Rio Oso, California
Phone: Wheatland, Calif. NEptune 3-2392

**IMPROVED**
**ITALIAN QUEENS**

| | |
|---|---|
| 1-25 | $1.00 |
| 26 up | .90 |

**LOGAN McWILLIAMS**
Cameron, Texas

## PACKAGE BEES "Gulf Breeze" ITALIAN QUEENS

When you employ a professional man, you want one with experience and a good reputation, so why not have men with over 50 years of experience to produce your bees and queens?

THOUSANDS OF EXTRA QUEENS available for your divisions and requeening. Queens will be available by mid-March. Clip 5¢ and Mark 5¢ each.

**Bessonet Bee Co. Donaldsonville, La.**

## PACKAGE BEES "ITALIANS" QUEENS

Never before have good packages and queens been so important. Serving those who demand the best.

| | 1-9 | 10-49 | 50 up |
|---|---|---|---|
| 2 lb. pkg. with young laying queen | $4.75 | $4.50 | $4.25 |
| 3 lb. pkg. with young laying queen | 5.75 | 5.50 | 5.25 |
| 4 lb. pkg. with young laying queen | 6.75 | 6.50 | 6.25 |
| Extra Queens | 1.50 | 1.40 | 1.30 |

Shipments by Express, Parcel Post or your Truck.
Quality Does Not Cost — It Pays

**THE WILBANKS APIARIES CLAXTON, GEORGIA**

## 1961 PACKAGE BEES AND QUEENS 1961

The South's Finest

**IMPROVED 3-BANDED ITALIANS**
DIRECT FROM OUR YARD TO YOU

Dependable Service

For choice shipping dates don't wait. Order now. Small orders no deposit required. Over $50.00, 10%. Full pay 10 days before shipping date. Over weight, safe arrival, state health certificate in U.S.A. and Canada.

PRICES

| | |
|---|---|
| 2-lb. pkg. with queen | $3.75 ea. |
| 3-lb. pkg. with queen | 4.75 ea. |
| 4-lb. pkg. with queen | 5.75 ea. |
| Untested queen | 1.00 ea. |
| Tested queen | 2.00 ea. |

**NORMAN BROS. APIARIES RAMER, ALA.**

## Caucasian Queens or Dadant's Midnites

| 1-24 | 25-99 | 100 up | 1-24 | 25-99 | 100 up |
|---|---|---|---|---|---|
| $1.45 | $1.35 | $1.25 | $1.70 | $1.60 | $1.50 |

**PACKAGE BEES WITH CAUCASIAN QUEENS**

| | 1-24 | 25-99 | 100-up |
|---|---|---|---|
| 2 lb. | $4.75 | $4.50 | $4.25 |
| 3 lb. | 5.85 | 5.60 | 5.35 |

For packages with Dadant's Midnite Hybrid Queens add 25¢ to the above prices. For clipping and marking queens add 10¢ each.

**Howard Weaver & Sons Navasota, Texas**

When you think of

## Bees & Queens

Think of:

## Merrill Bee Co.

**P. O. Box 115**
**State Line, Miss.**

With normal weather all orders should go out on time as our bees are in good condition.

Our 100% satisfaction has been good for 49 years, let us prove it.

**Packages with Queens (Italian only)**

| | |
|---|---|
| **2-lb. pkg.** | **$3.75 any number** |
| **3-lb. pkg.** | **4.75 any number** |
| **Untested Queens** | **1.10 any number** |
| **Tested Queens** | **1.50 any number** |
| **For larger pkgs. add** | **1.00 per lb.** |

Terms $1.00 per package with orders balance before shipments.

## Better Bred Queens 3-Banded Italians

We are the beekeepers' friend, both large and small. We can handle truck loads, also have good express and mailing facilities. We are holding our prices at a minimum, not cutting the quality. Our **BETTER BRED STOCK** is known throughout the U.S.A. and Canada. They will give satisfaction. Our queen yard is Fumidil-B treated. Book early at the following prices:

| | QUEENS | 2 lb. w/q | 3 lb. w/q |
|---|---|---|---|
| 1 - 24 ..... | $1.25 | $4.25 | $5.40 |
| 100 up ..... | 1.15 | 4.00 | 5.15 |

## Calvert Apiaries Calvert, Alabama

**Phone Valley 9-6183**

## -REMEMBER-

THE BEST HONEYCOMBS KNOWN ARE MADE FROM

## EBY'S PERMANENT FOUNDATION

BY ALL MEANS — HAVE THE BEST
USE THIS SENSATIONAL PERMANENT COMB FOUNDATION WITH THE ALUMINUM BASE

SEE YOUR LOCAL BEE SUPPLY DEALER

## LIVE AND LEARN

(Continued on page 162)

when there is the most difference between a mild and a hard winter — this year especially, because I am going to have to feed syrup and pollen substitute instead of having nice dark combs of pollen and honey to give them a break while waiting for natural stores to be available. This comes about because I use shallow supers for honey, and we'll talk about that next month.


**IT'S A FACT . . . .**

Good queens often times correct poor locations, disease, and crop failure.

Money can't buy a better queen.

**Leather Italians**

**FOR 1961 — BY AIR MAIL**

| | | After June 1st |
|---|---|---|
| 1-25 | $1.25 | $ .85 |
| 26 up | 1.00 | .75 |
| Select tested | $3.00 | |
| Approved breeders, | 5.00 | |

South America and European countries add 25%.

Limited numbers of pkgs. express collect

2 lbs. with queen . . . . . $4.00

3 lbs. with queen . . . . . 5.00

50 pkgs. up deduct 25¢ per pkg.

You too can be sure by placing your order early.

25% books your order, balance 15 days prior to shipping date.

**O. K. Anderson & Son**

Box 516

Coffee Springs, Alabama, U.S.A.



**HOMAN'S**

Quality Bred

Caucasian or Italian

**Bees and Queens**

| 2-lb. w/q | 3-lb. w/q | 4 lb. w/q | 5-lb. w/q |
|---|---|---|---|
| $3.75 | $4.75 | $5.75 | $6.75 |

Queens . . . . . $1.15

Write for reduced prices after May 20. All queens postpaid, airmailed. Health certificate and live arrival guaranteed.

**HOLDER HOMAN**

Ph. PO 7-3880 Shannon, Miss.


## TALKS TO BEEKEEPERS

(Continued from 175)

ing rainy weather. I make it a point in the fall, to pile up some mouse proof supers of combs at each yard, so that they will be available when needed the following spring.

**Using Entrance Reducers**

Some beekeepers are now saying that they do not use hive entrance reducers but leave the ⅞-inch entrance open all winter. I like entrance reducers to keep out mice. Sometimes mice will gnaw a hole through the wooden entrance reducer but not often. (Some place ¼-inch wire screens over hive entrances to exclude mice.)

Now here is something I think should be kept in mind, — these reducers should be placed in the entrances fairly early in the fall to keep mice from entering the hives and making a nest underneath the brood chamber. If reducers are left out until late in the fall mice have had a chance to enter the hives when cool weather arrives. I think too, that the entrance reducers help to keep some of the cold winter blasts out of the hives. Of course, I aim to have a small upper entrance in each hive. I call this a safety valve, in case the lower entrance becomes clogged with ice or dead bees.

**Check for Dead Colonies**

By all means hives of bees should be visited the first warm day in early spring to make sure bees are flying from all hives. If any colonies have died during the winter, the dead bees should be removed and hive entrances closed tightly to keep out robber bees.

If the cells in the middle combs of the brood chamber are found to be free from dead brood, or dried down remains of larvae (scales) they are likely free from disease and can be used for package bees or swarms. Taking proper care of such combs, especially if the upper portions contain some honey, will avoid robbing, which, if it gets started, is likely to cause some trouble.


**NOTICE:**

L. H. LITTLE, Shelbyville, Tenn. will not be breeding queens in 1961. Associated for several years with Mr. Little in breeding queens.

**RICH MOUNTAIN APIARIES**

Cosby, Tennessee

Will this year offer the famous "LITTLE" strain of Italian queens. Write for prices.

**Shoot for profit - - - - Shoot for the STAR**

**Order STARLINE queens this season and profit.**

| | QUEENS | | PACKAGES WITH QUEENS | | |
|---|---|---|---|---|---|
| | Starline | Italian | 2 lb. | 3 lb. | 4 lb. |
| 1-24 | $1.75 | $1.45 | $4.75 | $6.00 | $7.00 |
| 25-99 | 1.65 | 1.35 | 4.50 | 5.75 | 6.75 |
| 100-Up | 1.55 | 1.25 | 4.25 | 5.50 | 6.50 |

Packages with Starline queens, add 30¢ per package.
Clipping 5¢ each, marking 5¢ each.

Reg. U. S. Pat. Off.

**GARON BEE CO. Donaldsonville, La.**

**Three Band and Pure Italian Hybrid Package Bees and Queens**
We ship pure worker bees by mail, express, or truck. We guarantee live arrival.

**1 9 6 1 PRICES**

| Each with a young laying queen | 2 lb. | 3 lb. | 4 lb. | 5 lb. |
|---|---|---|---|---|
| 1 to 11 Each | $4.25 | $5.35 | $6.45 | $7.55 |
| 12 to 29 Each | 4.05 | 5.10 | 6.15 | 7.20 |
| 30 or More Each | 3.85 | 4.85 | 5.85 | 6.80 |

| | 1 to 11 | 12 to 29 | 30 or more |
|---|---|---|---|
| Untested Queens | $1.40 | $1.30 | $1.20 |

**Tested Queens, $2.00 each.**
For Booster Bees, deduct the price of the queen in quantities.
**ROYAL JELLY ..... $10.00 Per Ounce**

**P. O. Box 265 JACKSON APIARIES Funston, Georgia**

**ITALIAN QUEENS — PACKAGE BEES**

| | 1-24 | 25-99 | 100-up |
|---|---|---|---|
| 2-lb. pkg. with queen | $4.25 | $4.00 | $3.75 |
| 3-lb. pkg. with queen | 5.25 | 5.00 | 4.75 |
| 4-lb. pkg. with queen | 6.25 | 6.00 | 5.75 |
| Queens | 1.25 | 1.20 | 1.15 |

**Tested Queens, $2.50**

**SUNRISE APIARIES Box 573 PETAL, MISSISSIPPI**

**BEES QUEENS — Three-banded Italians**

| | 1-24 | 25-99 | 100-up |
|---|---|---|---|
| 2-lb. pkg. with queen | $4.50 | $4.25 | $4.00 |
| 3-lb. pkg. with queen | 5.70 | 5.45 | 5.20 |
| Queens postpaid | 1.45 | 1.35 | 1.25 |

**Tested queens, $2.50**
For larger packages add $1.20 per pound.
No charge to clip or Airmail queens. Add 10¢ to mark.
Packages F.O.B. Hattiesburg.

**W. E. PLANT Rt. 2 HATTIESBURG, MISS.**

## ARGENTINE RAPE SEED

(Continued from page 171)

I've had several inquiries regarding the value of rape for a supplementary source where fall nectar fails. I would suggest you plant early enough to have full advantage of the bloom prior to frost. Rape plants stand very little frost as seedlings but will tolerate modest freezing during the bloom period although seed following would be worthless.

If you are growing for a fall source of honey and the possibility of cooler weather, be sure to try some reliable strain of Caucasian bees along with your regular stock. I know you will be glad you did.

I trust the above will be found of value to those readers of Gleanings contemplating the trial of rape as a new nectar source for their bees plus added income.


**ITALIAN BEES AND QUEENS**
2-lbs. with queen ..... $3.75
3-lbs. with queen ..... 4.75
Extra queens ..... 1.25
Shipped P.P. or Express.
**RAYMOND McFARLING**
Rt. 3, Box 325 Tupe'o, Miss.

**UNTESTED CAUCASIANS**
If your present shipper can't ship
**Try Mine ..... $1.25**
**JIM DAVIS BEE FARM**
NAVASOTA, TEXAS
TA 5-3941 P.O. Box 373

**California Italian Queens**
Extra Good Breeders
**1 to 24 queens .... $1.20 each**
**25 or more ..... 1.10 each**
**DAN W. ALVIES**
670 Roe Road Paradise, California

Produced in GRIFFITH'S Apiaries
THE FAMOUS "LITTLE" STRAIN OF ITALIAN QUEENS AND ROYAL JELLY
1-24 ..... $1.50
25-99 ..... 1.40
100 & up ..... 1.30
I solicit your patronage
**W. C. GRIFFITH'S APIARIES**
(Successor of Leslie Little)
4811 Abbay Dr. Nashville 11, Tenn.

**PACKAGE BEES**
Let us supply you packages with either ITALIAN or ISLAND HYBRID queens.
We will be ready to start shipping April 1st by method of your choice. FOB here.

| With Italian Qns. | 1-24 | 25-99 | 100 up |
|---|---|---|---|
| 2 lb. (ea. qn.) | $4.75 | $4.50 | $4.25 |
| 3 lb. (ea. qn.) | 6.00 | 5.70 | 5.40 |

All queens clipped unless ordered otherwise. Marking 10¢ extra per queen.
For ISLAND HYBRID queens, add 30¢ each to above prices.
**"They Produce"**
Trucks loaded by prearrangement.
**Rossman Apiaries**
P. O. Box 133 Moultrie, Ga.

**GASPARD'S**
QUALITY ITALIAN BEES & QUEENS
2-lb. pkg. w/q ..... $3.60
3-lb. pkg. w/q ..... 4.25
4-lb. pkg. w/q ..... 5.00
5-lb. pkg. w/q ..... 6.20
EXTRA QUEENS 1-9 ..... 1.10
10-up ..... 1.00
For queenless packages, deduct $1.00. Health certificate and live delivery guaranteed.
10% books your order, balance 10 days before shipping. Shipping season starts April 1st.
GASPARD BEE CO. HESSMER, LA.

**NORMAN'S**
Improved 3-Band
**ITALIAN BEES & QUEENS**
From top honey producing hives.
2 lb. pkg. w/q ..... $3.75
3 lb. pkg. w/q ..... 4.75
4 lb. pkg. w/q ..... 5.75
Queens ..... 1.00
Full weight, safe arrival guaranteed, with health certificate furnished. 10% books your order.
**NORMAN BEE CO.**
Route 1 Ramer, Ala.

**JENSEN'S QUEENS AND PACKAGE BEES**

| Pkgs. with DADANT "Starline" Hybrid Qns. | | | | Pkgs. with JENSEN'S "Magnolia" State Italian Qns. | | |
|---|---|---|---|---|---|---|
| | 1-24 | 25-99 | 100 up | 1-24 | 25-99 | 100 up |
| 2 lb. | $5.05 | $4.80 | $4.55 | $4.74 | $4.50 | $4.25 |
| 3 lb. | 6.15 | 5.90 | 5.65 | 5.85 | 5.60 | 5.35 |

**QUEENS**

| STARLINE | | | MAGNOLIA | | |
|---|---|---|---|---|---|
| $1.75 | $1.65 | $1.55 | $1.45 | $1.35 | $1.25 |

Reg. U. S. Pat. Off.

Air Mail Postage Paid on Queens Clipped FREE — Packages F.O.B. Shipping Point Marked 10¢

MACON, MISSISSIPPI Phone 170 J

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| DADANT STARLINES | | QUEENS | ITALIANS |
|---|---|---|---|
| 1-24 | $1.20 | | $1.05 |
| 25-99 | 1.15 | | .85 |
| 100-up | 1.05 | | .75 |

Prices from June 1st to Sept. 1st Add 10¢ for clipping and marking.

**E. J. BORDELON APIARIES** **Phone 2583** **Moreauville, La.**

---

**OFFERED FOR FIRST TIME**

**Dadant's New Starline Hybrid Queens, $1.75 each 100 up, $1.55 each**

**2-lb. package bees headed with these queens ..... 4.75 each**

**3-lb. package bees headed with these queens ..... 5.75 each**

These queens have been tested over a five-year period and according to G. H. Cale, Jr., are superior to all previous Hybrids.

**B. A. ANDERSON Route One Phone HYatt 3-7584 OPP, ALA.**

---

## BEE SUPPLIES

Why Pay More?

Send for free catalog and compare prices.

**KEHM BROS. APIARIES**

**Route 1, Box 346**

**Grand Island, Nebraska**

**DUpont 4-0920**

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**FOR SALE**

10,000 QUEENS — 2,000 SWARMS Only

QUEENS, any amount .....$1.00 ea. (Air Mail)

2-lb. pkg. w/q ..... 3.50 ea. (Exp. collect, not P.P.)

3-lb. pkg. w/q ..... 4.50 ea. (Exp. collect, not P.P.)

Shipping starts about March 25th.

**GULF COAST BEE CO.**

Schriever, La.

---

**PACKAGE BEES & QUEENS**

**Starline and Reg. Stock**

Extra Good Honey Gatherers

| STARLINES | | STARLINE QNS. | |
|---|---|---|---|
| 2 lb. & Qn., | $4.80 | 1-25 | $1.75 |
| 3 lb. & Qn., | 6.00 | 25-100 | 1.65 |
| 4 lb. & Qn., | 7.20 | 100 up | 1.55 |

For large quantity of packages write for prices. For reg. stock queens and packages, deduct 30¢ per package or queen.

ROYAL JELLY .....$10.00 per oz.

Queens any time now.

Queens, clip and mark, 10¢ each.

**ALAMANCE BEE COMPANY**

GEO. E. CURTIS & SONS

LaBelle, Fla. Phone: OR 5-3412

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When Answering Advertisements, Please Mention GLEANINGS IN BEE CULTURE

## PACKAGE BEES AND QUEENS

**Walker-Lee Co. Live Oak, Calif.**

**QUALITY IN PACKAGE BEES AND QUEENS**

Caucasian or Italian, gentle, highly productive. Health certificate, live arrival guaranteed.

| Lots of | Queens | 2 lb. w/q | 3 lb. w/q | 4 lb. w/q | 5 lb. w/q |
|---|---|---|---|---|---|
| 1 to 25 | $1.50 | $4.25 | $5.35 | $6.45 | $7.55 |
| 26 to 99 | 1.35 | 4.00 | 5.05 | 6.10 | 7.15 |
| 100 up | 1.20 | 3.75 | 4.75 | 5.75 | 6.75 |

FARRIS HOMAN SHANNON, MISS.

**QUALITY BRED**

## Italian Queens

Breeders selected from our northern apiaries for hardiness and honey production. Air mail delivery on all queens.

Lots of

1- 24 ..... $1.40 each
24- 99 ..... 1.30 each
100-499 ..... 1.25 each

Marking 10¢ extra, clipping free

**WALTER D. LEVERETTE APIARIES**

P.O. Box 364 Ft. Pierce, Fla.

## Kruse Uncapper

Save time and labor by uncapping your honey combs with the KRUSE power operated uncapper.

Uncaps both sides of comb at one time.

Priced right for small and medium size operators.

Write for illustrated circular and price.

**F. A. Kruse**

Rt. 1, Luck, Wis.

## Queens

| Italians | Caucasians | | |
|---|---|---|---|
| | 1-24 | 25-99 | 100 up |
| 2-lb. pkg. | $4.00 | $3.85 | $3.75 |
| 3-lb. pkg. | 5.00 | 4.85 | 4.75 |
| Nice large queens | 1.15 | 1.10 | 1.00 |

Early March Queens

**To clip and paint queens, add 10¢ each queen.**

**For air mail queens, add 5¢ each queen.**

All queens are personally reared, shipped when you want them, and your order appreciated.

Order 1 or 1000

**Mitchell's Apiaries**

Bunkie, La.

## QUEENS

**ITALIAN**

NORTHERN TESTED STOCK

A Dependable Source of Good Early Queens

PRICE TO JUNE 1st

Singles ..... $1.50
2 to 9 ..... 1.35
10 to 25 ..... 1.25
25 to 100 ..... 1.20

QUANTITY DISCOUNT

**A. J. BOETTGER**

Route 1, Box 1070 Naples, Fla.

KELLEY — "The Bee Man"

## KELLEY'S BEES

Improved three-banded Italian bees and queens direct from our own farm. Shipments start April 1st, express or parcel post shipment. Thousands of extra queens.

| | Queens | 2-lb. w/q | 3-lb. w/q |
|---|---|---|---|
| 1-24 | $1.25 | $4.25 | $5.25 |
| 25-99 | 1.20 | 4.00 | 5.00 |
| 100-up | 1.15 | 3.75 | 4.75 |

## THE WALTER T. KELLEY CO.

## Clarkson, Ky.


**CORRECTION — Prices appearing in this advertisement last month were incorrect due to an error on the part of Gleanings.**

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